SEPTEMBER, 1943

THE VOLTA REVIEW

Proceedings Number

This issue is entirely devoted to the Proceedings of the Fifty-Eighth Annual Convention of the American Association to Promote the Teaching of Speech to the Deaf, held in Detroit, Michigan, June 21-25, 1943.

Founded in 1899 by Alexander Graham Bell

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The Volta Review is published monthly by the Volta Bureau. 25c a copy, $2.00 a year. In Canada and the other Americas, $2.25. Foreign, $2.50.

Entered as second class matter at the post office at Baltimore, Md., under Act of August 2, 1912. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized January 22, 1932.

Publication Office: Monumental Printing Company, 32nd Street and Elm Avenue, Baltimore 11, Md.
Editorial Office: 1537 35th Street, N. W., Washington 7, D. C.

Contents, September, 1948

Summer Meeting of the American Association to Promote The Teaching of Speech to the Deaf

SPECIAL ADDRESSES

How Our Schools Can Solve Some of Today's Problems, *Clarence D. O'Connor,* President of the Association; Superintendent, Lexington School for the Deaf, New York 399

What the Medical Profession is Doing to Help the Deaf Child, *Bruce Proctor, M.D.,* Detroit, Michigan 443

GROUP DISCUSSIONS OF TOPICS IMPORTANT TODAY

Tuesday, June 22

Nursery and Pre-School

Eleanor Vorce, Lexington School for the Deaf, New York 403, 407
Helen Gilmartin, Detroit Day School for the Deaf 404, 410
Eleanor McCabe, Detroit Day School for the Deaf 404, 408
Edith Watson, Michigan School for the Deaf, Flint 406, 412
Helen S. Lane, Central Institute for the Deaf, St. Louis 410
Discussion 413

Speech for the Deaf Child

Enfield Joiner, Talladega, Alabama 417
Agnes Stokoe, Detroit Day School for the Deaf 422
Elizabeth Scott, Parker Elementary School, Chicago 423

Wednesday, June 23

Reading for Deaf Children

Gladys Pugh, Central Institute for the Deaf, St. Louis 426
Discussion 429

The Teaching of Language

Lillian Keller, Detroit Day School for the Deaf 432
Catherine Ford, Ontario School for the Deaf, Belleville 433
Sister Anna Rose, St. Joseph's School for the Deaf, St. Louis 435
Rachel Dawes Davies, Western Reserve University, Cleveland 437
Discussion 441

Thursday, June 24

Lipreading in Present Day Education

Grace Harris Lassman, John Tracy Clinic 445
Mary E. Numbers and C. V. Hudgins, Clarke School, Northampton, Mass. 449
Marjorie Hammond, Lowrey School, Dearborn, Michigan 456
Sister Mary Laurentine, St. Joseph's School for the Deaf, St. Louis 457
Esther Howes, Parker High School, Chicago 458

Friday, June 25

Assessment of Hearing Loss and Use of Residual Hearing

S. Richard Silverman, Central Institute for the Deaf, St. Louis 464, 508
Jacqueline Keaster, University of Iowa, Council Bluffs 465
D. E. Morley, University of Michigan, Ann Arbor 468
Florence Olson and Margaret Soissons, Central Institute for the Deaf 478
Clarence V. Hudgins, Clarke School for the Deaf, Northampton, Mass. 484
Louis M. Di Carlo, Syracuse University, Syracuse, N. Y. 490
Frances B. Asals and Henrietta C. Ruthven, Pennsylvania School for the Deaf 498
Discussion 502

BUSINESS MEETINGS OF THE ASSOCIATION

Special Meeting 415
Discussion of Proposed Constitutional Amendments

Annual Meeting 460
Reports, Presentation of Gift, Election of Directors, Action on Constitutional Amendments, Resolutions

HERE AND THERE AT THE SUMMER MEETING

Informal Photographs of Members

Mr. W. J. Morrison, Belleville, Ontario, Canada 431
Sister Anna Rose, St. Louis 436
Miss Esther Howes, Chicago 441
Dr. Bruce Proctor, Detroit 443
Dr. C. D. O'Connor, Dr. Proctor, Josephine Balfour 444
Mr. Herman Goldberg, Mr. E. B. Boatner 459
Dr. Carl Rankin, Mr. John A. Klein, Mrs. C. D. O'Connor 510
Dr. Frank Reiter, Mr. Fred L. Sparks, Miss Mary Numbers 511

The Volta Review

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Vol. 50, No. 9 | EDUCATIONAL PRESS ASSOCIATION OF AMERICA | September 1948

The Fifty-Eighth Summer Meeting-1948

Opening Session—Monday, June 21

THE opening session of the fifty-eighth annual meeting of the American Association to Promote the Teaching of Speech to the Deaf (Nineteenth Summer Program Meeting), held in Webster Hall, Detroit, Michigan, was called to order at 8 P.M. by the President of the Association, Dr. Clarence D. O'Connor.

DR. O'CONNOR: Ladies and gentlemen, you see before you a mirage—I am not here; I am not presiding tonight. Although you probably see me up here, don't believe it—Miss Alcorn is presiding, and I would like first to present to you our charming hostess, Miss Sophia Alcorn, Principal of the Detroit Day School for the Deaf.

MISS ALCORN: It does my heart good to see so many teachers and principals of schools for the deaf. I have asked Dr. O'Connor to preside because I feel that my part of the program is speaking to you through the children in the demonstrations. I am going to let other people do the talking.

We want you all to come and visit the school, see all the demonstrations, and stay for all the lectures. I am sure your stay in Detroit will be delightful to you, as it is to us. If there is anything we can do to make your time pass more happily, let us know. You are all most welcome.

DR. O'CONNOR: I am very happy, as President of the Association, to add my welcome to that of Miss Alcorn, as we open the Fifty-Eighth Annual Meeting of the American Association to Promote the Teaching of Speech to the Deaf. For the rest of this week we shall be the guests of the capable staff of the Detroit Day School for the Deaf. I know, looking at the program which Miss Alcorn and her committee have prepared, that the meeting is going to be a very constructive, fruitful, and happy one. It is no small task to organize a conference of this nature, but the people of Detroit seem to have the habit of getting big jobs done expeditiously. Miss Alcorn has demonstrated this most clearly in the quiet but efficient manner in which she has planned this program.

At this point Dr. O'Connor introduced DR. MARCUS SHATTUCK, Assistant Superintendent of Schools. Dr. Shattuck brought greetings from Superintendent Arthur Dondineau, who was disappointed at not being able to be present.

"It is a great challenge that confronts you and your organization in your meeting here," said Dr. Shattuck. "Speech, not alone in the sense in which you are using it, but speech in general, is coming into its own; there is increasing recognition of its importance. There is nothing today which is much more important than that which has to do with the science of communication, and when we try to improve communication we are thrown back upon the fact that the most important means of comunication, first, last, and always, is human speech. Certainly anything you can do to help improve that means of communication for those who have so great a handicap is something which is going to mean much for the individual and much for educational progress. We are glad to have

you here, and we hope you will have a great meeting."

President O'Connor next presented Miss Anna M. Engel, Director of Special Education in the Detroit City Schools.

"Special education," said Miss Engel, 'is concerned with all types of handicapped children. Of the whole group, none is more interesting to us than the deaf child, and to that group I believe you can bring the newest and the latest in techniques and thought. That is why we welcome you so sincerely—we want to do just the very best that we can for those children, they are very dear to us. And what I like about your techniques is that you consider these children as children first and as deaf children second. I like the way you are going about taking them early. We know in all fields of special education that the younger we begin the training the more success we are going to have. I also like the way you are pooling your ideas. I read your publications from the Volta Bureau with great interest, and I like the way you are feeling your way through the new things that are coming about. I think you are not only teachers, but scientists. When a new approach is suggested, you are not just saying 'Pooh! there is nothing to that.' You are saying 'Let's see what there is in this.' I notice in your publications that experimentation is going on. That is as it should be, and I hope that out of a meeting like this, even if only in a small way, there will come a little better feeling for right techniques, a little stronger feeling toward what can be done for the deaf. I am going to attend all of your sessions, because what I don't know about teaching the deaf is much more than what I do know. I hope to learn much this week, and I bid you welcome."

The teacher of our deaf youngsters in Dearborn used to send the little tots on errands, to get them out on their own as soon as possible. One day she sent a little girl to my office with a message, and she told her that if I were not there, just to take a chair. Well, I was not there, and the next thing the teacher knew, coming down the hallway was this little youngster struggling with my office chair —she had taken it literally.—Dr. John Tenny, at the Association meeting in Detroit.

The next speaker introduced by Dr. O'Connor was Dr. John Tenny, Director of Special Education of Wayne University. Dr. Tenny explained that he had come to his present position at Wayne from an administrative position in a special education school at Dearborn, where he had had first hand contacts with deaf children and their problems. He told of the success of some of the older deaf boys at Dearborn who, seeing other handicapped students enrolled at the Ford Trade School, requested that they be allowed to go there, and were accepted and provided with a program to meet their needs. He told also of the difficulty encountered in persuading the Dearborn High School to accept handicapped students. "One of the crowning delights of the whole experience," he said, "was to have one of our deaf girls, just this last week, on the honor roll of the high school competing with hearing youngsters and winning that recognition. That girl had done her share to see to it that that high school would take handicapped children thereafter with less hesitation."

From his experience in the Department of Teacher Training at Wayne, Dr. Tenny stressed the need for recruiting more students to be trained in work with the deaf. "Teachers of the deaf," he said plaintively, "are so marriageable. Mine were married faster than in any other department of the school, and Dr. Lord tells me that of the four trained this year at Ypsilanti, either three or perhaps all four are to be married this summer and thus will be available for teaching only in the vicinity of their husbands' residence. We need help in the matter of recruiting."

Dr. O'Connor thanked the speakers for their welcome, and stated that the President's address was next on the program.

How Our Schools Can Solve Some of Today's Problems

By Clarence D. O'Connor, L.H.D.

The American Association to Promote the Teaching of Speech to the Deaf, founded in 1890 by Dr. Alexander Graham Bell, throughout the years since its establishment has consistently and ceaselessly championed the philosophy that a deaf child will be a much more effective and happy citizen if he is able to interpret and use in every way the language of the country in which he lives. This includes his ability to speak the language, to read written or printed language, to interpret through lipreading the spoken language of others, and, to whatever degree his hearing will permit, to understand this oral language through his ear. In all our program meetings these four language mediums have been given greatest prominence. In our official publication, the Volta Review, have been presented current information, opinions and suggestions touching upon these. The Volta Bureau, which is under the direction of the Association, and is the national center for the dissemination of information pertaining to the deaf and deafness, and which was established by Dr. Bell in 1887, has served as the most important medium in the country for implementing this philosophy.

This intensive effort to give the deaf child the language skills of his country has come to be known as the Oral Method. What a strange misnomer that is! I suppose, however, that the reason this connotation has developed is that the most complex, yet the most eagerly desired, of these skills is that of speech. Where, then, do we stand today in this matter of speech for the deaf? Is it satisfactory? Can we as educators of the deaf do a better job than we have been doing? What more can the Association and all who are interested in the education of the deaf and their effective adjustment to life do to raise our levels of achievement higher?

I can think of no more discouraging task than that of teaching the deaf to speak. Perhaps this is because we are all in greater or less degree perfectionists. The more expert the teacher, the greater the degree of dissatisfaction with the results. Speech is such a vastly important social skill that deviations from the normal are very disturbing. Certainly it is true that, because of the severe handicap nature has imposed, even the best speech we can secure from the deaf cannot be completely normal. But it can be thoroughly understandable and eminently satisfactory. This has been demonstrated over and over. Not all deaf children, of course, can be taught to speak equally well. The vast majority, perhaps 50%, may fall in the group whose speech could be termed only fair to good. Another 20% may fall in the group whose speech may be called good to excellent and possibly 30% whose speech may be labeled as poor to very poor. I have not listed any as being completely devoid of any speech, for I am convinced that every deaf child can learn to speak at least to some degree. Is our speech score satisfactory? I would say it definitely is not. But I must add emphatically that to subscribe wholeheartedly to a philosophy which enables us to produce this top 20% in the excellent group, with another potential 30% in the very good group whose speech is eminently effective, makes our speech zeal not only worth while but a "must" in the scheme of things.

Certainly this 50% of high achievement in the program of a school for the deaf cannot be reached by what might be called a lackadaisical approach to the teaching of speech; it has to be quite a solid approach to get high results. And when I say high results (and my co-workers may disagree with me in some respects), I am speaking of raising the general level of a school for the deaf to a point where approximately 50% of the children may talk eminently satisfactorily.

What Can Be Done?

What can we as individuals do to raise the level of speech achievement in the deaf?

The development of speech ability in deaf children is a cooperative activity that extends from infancy to graduation. The parents play a very important part in this, for the speech stimulation that is given in the home may be the deciding factor in determining whether a deaf child falls in the group achieving outstandingly, moderately, or poorly. The authoritative and final responsibility, however, must rest with the school, for the greater part of the deaf child's time from first admission to graduation is spent in that atmosphere.

The First Influence

The classroom teacher, of course, is the immediate influence that will determine the degree of successful speech attainment. My idea of a good speech teacher of the deaf is one who teaches speech during every period of the day.

"How can this be done?"

"How can we find time to teach other things but speech?"

It can be done. I have seen a number of teachers who teach in this manner and believe me, it is an inspiration to watch them. It matters not whether the subject at hand may be arithmetic, social studies, or literature, the effective use of speech is stressed throughout. The good teacher of speech instills in her deaf pupils a very real interest in speech, weaving corrective activities in skillfully as needed while maintaining constantly the real purpose of speech, namely, the transfer of ideas. This philosophy of speech teaching can be applied to deaf children of any age, and if begun in the nursery school, will go a long way toward assuring continued interest on the part of the pupils throughout their school lives. I strongly believe that teaching speech to the deaf is more quantitative than qualitative, for truly the best results I have seen have been achieved by good teachers who have everlastingly kept at it in an interesting way. Counselors or housemothers and housefathers also can play a most important part in encouraging speech growth in deaf children outside the classroom by placing high values on the effectiveness of this skill as a means of satisfying wants or getting information.

The Most Important Influence

The most important individual of all in the speech program, however, is without question the head of the school. Upon him must rest inevitably the responsibility for the entire program the school offers. It is he who must inspire the members of his staff to continually seek higher levels of attainment in all branches of the curriculum. It is he who is responsible for the direction the school will take, whether forward into channels that lead his pupils to levels of more enlightened, capable citizenship, or backward toward the archaic educational philosophy that produced the "deaf and dumb." Education, like all other fields of interest, is not static. We either progress or retrogress.

How can he determine which curricular activities should be strengthened and expanded to place his school in the position of meeting the challenge of life today? Perhaps it would help him to consider the answers to the following questions:

"What is the paramount hope of every parent of a deaf child when he first enrolls his child in a school for the deaf?"

"That he may learn to speak and read the lips effectively."

It is true that the parent also wants his child to learn to read and write, to get a good general education, and to receive vocational training in preparation for a job; but most eagerly desired of all is that his child may learn to speak and understand spoken English. The school head should pause and think seriously of this fact for a moment, for should not the parents' wishes be given due and adequate consideration? I think they are entitled to this, for after all, the schools belong to the people.

A second question which needs answering is:

"Why are resident schools for the deaf

particularly under more or less continuous attack from different quarters?

The answer to this question is multiple. One reason is the unwillingness of many people to subscribe to an educational program that removes children from their homes for extended periods of time, even though they may concede that because of distance and other factors some deaf children may have to attend a resident school. Another basis for criticism is the program offered. Again the opposition centers around limited opportunities for learning speech and lipreading. How many times have you not heard this condemnatory observation: "Oh, I wouldn't send my deaf child to that institution—the children don't learn to speak there. All they can do is talk on their hands."

What should these answers mean to us? They tell us that the most highly desired skill deaf children can acquire and the one which is most proudly demonstrated is their ability to speak and understand the language of their country. How proudly parents show off the speech and lipreading abilities of their deaf children! What do we school heads demonstrate to visitors with greatest pride? Speech and lipreading. What do uninitiated visitors find most amazing in a school for the deaf? The miracle of speech and lipreading.

Much Misinformation Abroad

In this connection, there is a great deal of misinformation today about how deaf children should be educated. I think perhaps there are more "experts" in the field of educating the deaf than in any other field. I have attended a good number of meetings recently, and there seems to be a very complacent idea on the part of innumerable organizations that it is a very simple thing to take deaf children, put them in a public school class, give them certain rather nebulous kinds of instruction, and they will learn to talk all right!

I had occasion recently to challenge the implication in this question, "Well, after all, what do you teachers of the deaf know about teaching the deaf?"

That question, implying criticism of the entire educational program, is typical of the casual, superficial observation of the so-called ineffective speech of the deaf on which condemnation is often based. Whether we are oralists or manualists, we know that the one thing that stands out in the mind of the person who has not really dealt with the problem of educating deaf children is the idea that these children are abnormal because they cannot talk, or cannot talk well.

I suggested that the questioners get into the problem and get their feet wet, and find out what a teacher of the deaf has to do when she is confronted with 12 children with IQ's ranging from 60 to 150, and is expected to teach them to speak. It would take very little experience of this kind to convince such critics that teaching speech to a child who has never heard is the most difficult educational task in existence.

Seriously, however, there is an appalling lack of information about the education of the deaf. If you don't believe me, go out to some of the meetings of organizations which have recently adopted the deaf as objects of their interest. In many of them there is a considerable feeling that deaf children can be better educated elsewhere than in the schools for the deaf.

I tell you frankly tonight, I am disturbed, for if that philosophy is permitted to become widespread, it could easily follow that a school for the deaf might be regarded as unnecessary. If the resident school for the deaf is eliminated, the deaf will suffer. The immediate question is, how can we improve these schools? That is why I am talking especially to the superintendents in the light of the questions asked above, asking them to examine their consciences and their administrative and curricular set-up.

A Logical Course

Simple administrative logic should tell the head of a school that expanding and strengthening the curricular provisions for the development and use of speech and lipreading in his school will do more than

anything else to provide an opportunity for the realization of parents' fondest hopes; to nullify the opposition of various groups to schools for the deaf; and to place his school in position to be referred to as a progressive school and one highly sought by parents and public officials as an effective educational medium for deaf children.

He must, however, go right down the line with speech. Too often lip-service only is given to this activity, the most desired of skills. He must and he should indicate by his public attitude toward speech that he believes in it for deaf children. He must and should make it clear to his teachers and other employees that speech and lip-reading should be used as much as possible both in and out of the classroom. Most important of all, he should, through various means, instill in both his staff and his pupils a feeling of great pride in the achievement of deaf children being able to learn to speak. It is hard work, but like all things difficult, it is more worth while and more appreciated when success has been achieved.

And when he gets all through with this maximum contribution of perspiration and inspiration that is necessary in a good school for the deaf, what has he? He still has an imperfect product, for the speech of the deaf is not perfect, but it still remains the most amazing skill of all. Part of our job is so to set up our curriculum as to provide the maximum speech possibilities, and then to tell the world about this miracle in every possible manner.

The American Association to Promote the Teaching of Speech to the Deaf supports the philosophy that every deaf child should be given a chance to learn to speak and read the lips. As an organization representing thousands who firmly believe in this, it does not say that every deaf child can learn to speak well and to read the lips expertly, but it does contend that every deaf child should have this chance. A real chance can be provided only if the philosophy of the school provides a continuous oral atmosphere at least throughout the school day. May the day soon arrive when that opportunity will be provided!

Dr. O'Connor: In concluding this opening session of our Summer Meeting, may I pay tribute to Miss Josephine B. Timberlake and her very able and hard working staff for the splendid job they have done in maintaining the services of the Volta Bureau. They have had to work under very difficult conditions for years, but I am happy to say that soon their quarters will be vastly improved. Approximately $70,000 has been granted by the Trustees of the Association for remodeling the Volta Bureau building. This work will be completed before the close of the year. May I also ask you to give serious consideration during the business meetings to the question of selecting a new name for the combined activities of the American Association and the Volta Bureau as well as certain minor changes in the by-laws that may be proposed. The name of our organization is exceedingly cumbersome. Perhaps a new one will give us renewed inspiration for the task before us.

I shall look forward to greeting all of you personally during the next four days, and I am confident that you will find joy and inspiration in the very excellent program that has been provided.

This brings our program to a close, and we shall adjourn to the delightful reception prepared for us by the Parent-Teacher Association of the Detroit School, to whom we are deeply grateful.

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Nursery and Pre-School

Tuesday Morning, June 22, 1948

THE meeting was held in the Auditorium of the Detroit Day School for the Deaf, Detroit, Michigan. President O'Connor called the convention to order at 10:45 a.m.

PRESIDENT O'CONNOR: Again it is my pleasure to welcome all of you to this Fifty-Eighth Annual Meeting of the American Association and particularly to our first panel, Nursery and Pre-School. MISS ELEANOR VORCE of the Lexington School for the Deaf is the Chairman of the Panel. The discussants will be introduced as they appear.

I am very pleased to present to you now Miss Vorce.

Plan of the Panel

MISS VORCE: Dr. O'Connor and friends of the Association: I hope that you all had a chance to see the nursery school demonstrations this morning, because there is nothing that can arouse your enthusiasm like seeing the children themselves.

Before we start painting a picture of what happens inside a nursery school, I thought it might be interesting to know about a recent survey that was made by Miss Mary Rugh of the Rhode Island School this last year. Of the 48 answers she received from schools to whom she sent questionnaires, only 13 reported that they had no nursery schools, which is a very good per cent. And there was unanimous agreement that this nursery school movement was a complete success. In fact, most of the schools wrote that their projects had been successful far beyond their fondest hopes. Of the schools replying, the day schools were the largest in number, and then came the private and denominational schools, and then the residential schools. They varied a great deal in the kinds of schools, the number of children, and in the ages. We found that there were children under the Sarah Fuller Foundation taken at one year eight months—you understand the Sarah Fuller Foundation works with the child in the home, so this was not a residential situation—and then other schools considered some of their seven-year-olds as nursery children. 581 children were listed in nursery schools and 78 teachers listed as teaching these children. So much for our background.

We are sorry that it was not possible to include on this panel representatives of all the different kinds of schools that we have in this country—the Tracy Clinic, for instance, which is unique, and the Sarah Fuller Foundation—but we do feel that the members of this panel represent a good cross section. We have two representatives from a day school, Miss Helen Gilmartin and Miss Eleanor McCabe of the Detroit Day School; we have a private school represented by Dr. Helen S. Lane, the principal of Central Institute, and a state residential school, by Miss Edith Watson of the Michigan School for the Deaf. The Lexington School is probably more like the day school than the residential school, although it combines both.

We cover a large geographic area. People from all parts of the country cooperated in the formation of this program, and one of the interesting things that we found was that everybody, no matter from what part of the country, was interested in the same things and facing the same problems in nursery schools. This is encouraging.

We expect to be very informal in our discussion. First, we would like to clarify what we mean by nursery school, as we discuss it. We are considering as a nursery program any program that is set up for children from 2½ to 5 years old.

There are so many important things that go into making up a nursery school. You have to have children, you have to have teachers, you have to have a place for them to go to school, you have to have equip-

ment, you have to have a daily program, and these are the very important framework around which the whole school is woven.

What happens inside a nursery school? How do we make up its program? How do we start it going?

I am happy to present to you Miss Helen Gilmartin and Miss McCabe, who will give you a thumbnail sketch of what goes on inside the Detroit Day School.

The Detroit Situation

Miss Gilmartin: In the Detroit Day School, children under twelve travel in city buses in which there is an attendant besides the driver. The school day lasts from 9 to 5:15. The children stay in nursery school all day. They have fruit juice in the morning, a hot lunch at noon, and a nap in the afternoon. For our staff we have one trained nursery school teacher, one trained in speech and lipreading, and one kindergarten teacher with nursery school experience. She divides her time, helps part-time in the nursery school, giving lipreading and sense training. We have also some help from one of the bus attendants—she is an older woman who has had 15 years' experience with children. We find this works out very well—the children respond to an older person—it's a sort of grandmotherly situation.

In the physical environment, we have one large playroom, one room in which I teach speech, one cot room, and one room where the children have their lunch—we found it did not work out to have them eat in the big lunchroom with the other children, so we fixed up a small room downstairs and their food is sent there.

This year the enrollment totals 29 children. It seems to be going up since the War. It fluctuates, but it remains in the 20's, usually.

We divide the children into two large groups. In Group I we have the babies. Group II is the older group we expect to pass. We keep them two years as a general rule, but when they come in at the age of three, they stay with us during the third or fourth year. The two groups can fluctuate—if a child comes in who has a little hearing, or who is older, more mature, then we put him in Group II and he remains only one year. On the other hand, if we have a child that is immature and cannot make it in two years, then we keep him in Group I and he takes a little longer. We usually find it works better if we let them take their time when they are babies, rather than push them ahead.

Miss McCabe: Our daily program begins at nine o'clock when about six or seven of the children come in on the very early bus. About 9:30 we hear an explosion in the hall and the rest of our twenty-some children come down.

They have come from all over the city and have ridden on the bus for periods varying from an hour to two hours. Our first need, then, when they arrive is to allow a little relaxation, to give them their fruit juice and graham crackers. Some of them have gotten up quite early in order to be on time for the bus. After they have had their fruit juice, we call the little ones, Group I, into the speech room. We say, "It's time to talk." The older ones all know about "time to talk," and they hold their play in abeyance slightly until the little ones have gone. And the one that hides over in the corner is always brought up by the older children because they are waiting for the smaller children to leave.

When they go into the speech room, they have vibration, sense training and speechreading. I won't attempt to tell you about that type of activity, because Miss Gilmartin is going to explain it in much more detail later.

The older children, the 4½'s and 5's, are left in our large playroom. We have doll corners set up, we have a sand table, we have blocks for vigorous play. Then as we see the opportunity, we have creative play at tables, which is usually more or less teacher-assisted, not directed.

At eleven o'clock all of our children have the opportunity of coming down to the gymnasium. Mrs. Gunn, who did such excellent work with the dancing this morning,

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has a free period of vigorous play. They learn to climb the rope, if they like to—it is marvelous to get them off the ground, their sense of balance is helped and their confidence is helped; they do a great deal of running and skipping and jumping, which is all very good for them.

They come back for a quiet time of sense training, cleaning up for lunch, have an early lunch, about 11:30, and immediately go to their cots. Those little children in the cot room really sleep, they nap from an hour and one half to two hours in the afternoon. The older children nap for approximately one hour, or one hour and fifteen minutes—since they are five or almost five that is sufficient for them.

When they get up, they go into the speech room, having vibration, speechreading, toning gymnastics, speech and sense training during the afternoon. As Miss Gilmartin finishes with them, she sends them back to us and they join the group outdoors, or they join the group of small children who have risen from their naps and are playing in their room.

We give them all milk and graham crackers before putting them on the bus at three o'clock, knowing that most of them will have at least an hour's ride before they get home. The fact that we have had very good attendance all year and that they are bubbly and happy, I think indicates that it is not too strenuous a program, although it is a strenuous one for small children.

CHAIRMAN VORCE: Dr. Lane, will you thumbnail your school for us?

At Central Institute

DR. LANE: Our program for the day is similar to the one that has been described. In our nursery school we have five classes, four that would meet the description that you had this morning, and the fifth a class that is over age, but has a similar program. They are children who have arrived at the age of five and in one or two cases, six, and are in their first year of school, so the program is under the head of the nursery school department.

Central Institute has accepted children as young as 22 months, but unfortunately with the long waiting list, and very fortunately with the correspondence course of the Tracy Clinic, I can suggest that the mothers do something at home and wait until the child is three.

The size of our classes averages six in the nursery school, but each teacher has an assistant. I have found that this is a very good place to put mothers to work who have had some experience in nursery school, with one who has had considerable experience in charge to direct the others. The teacher therefore remains in the classroom and teaches right straight through the morning, and the children are taken from the class room, with the mother assisting, for the rest, the milk and crackers, and the play activities and assistance in the classroom with the sense training.

The division of the classes consists of those who are in their first year of nursery school, the children approximately at the age of three; those in their second year of nursery school, who are three and four; and those in their third year of nursery school, four and five years of age; and then there is one older class. There is also the extra class that I mentioned, which is in an acoustic room. Those children have demonstrated that they have a great deal of residual hearing, and in this one classroom we have a very fine group hearing aid, and this class stays in the room all day and the others only get a chance at it during one period of the day, because we don't have enough to go around as yet.

The day starts at 8:40 in the morning with the class as a whole. Our children are both residential and day pupils and the parents are responsible for getting them to school, therefore, we find that there is not too much fatigue. We do not have the long bus rides—maybe one or two of them have a long ride in the car with mother or daddy, but we don't have that element to think of at the beginning of school and we usually tune them up and begin some of their voice building exercises the first thing in the morning, and then break into groups in the classroom.

Those who are approximately five stay for one hour in the afternoon. We work the division in this way: we have the children who are day pupils there for the first hour—and we too find that we have to provide a special lunch room for the babies, because they cannot be mixed with the older children, but the lunch is at the same period.

Residential pupils sleep the first hour and come back to the teacher for the second period; the day pupils go home at two o'clock.

MISS VORCE: Mrs. Watson, would you tell us about the Michigan school?

The Procedure in Michigan

MRS. WATSON: I would like to bring another element into this discussion and that is, the nursery school in the large public residential school. I think the day schools have been sold on nursery schools for a long time, but I don't know whether we have always been sold on it in the large public residential school.

This past year we admitted, or we already had in school, 36 children from the ages of three through five. We also admitted our usual number of six and seven year olds. However, I don't consider children of this age as strictly nursery school material, and we modify their program in accordance with their greater social and emotional needs, so I won't include any six or seven year olds in this discussion.

Yesterday this group had an informal talk and one of the most interesting things discussed was the various ways in which we group our children. In our nursery, we have something similar to Dr. Lane's program—it perhaps is not quite so good because our groups are a little larger. They range from seven to nine children, but these children remain all day with one well trained adult.

There are several reasons for this. First of all, we feel that the children in the smaller groups in school are not so apt to be over-stimulated or over-excited; and secondly, we feel that this dividing into small groups with one well trained adult, a person trained not only in nursery school, but in principles of education for the deaf, enables us to group our children closer, chronologically.

Last year I had a group of eight children; they entered in September and their ages ranged from three years six months to four years—a differentiation of only six months. In such a group you have many, many individual differences; nevertheless, the children were strikingly similar in their physical development and in their social and play interests, and I found it a great help to have them so closely ranged in age and so very much alike in many ways.

In the large residential school our little children are far away from home for the first time, and they have to adjust not only to a lot of strange, new people in school, but to many strange, new people outside of school. Your little child in your day school goes home at night to mother and daddy, goes home to a small family group, to something that is familar and well known; your child in your large residential school does not do that—he goes home to a residence hall. It is a good one, but it still has the excitement and stimulation of many children, who eat and sleep together, and we feel that our children need a relaxation from tension. That is an important reason why we feel that they need to be with perhaps one adult during the day, who can take this small group and to some extent take the place of the mother and teacher, rather than in a larger group where they are more stimulated and more excited, as would be the case in your normal day nursery situation.

Your larger group is excellent for your day school, but I favor the smaller group in this other situation.

We also feel that our nursery school teachers should have a very close relationship with the house parents. I don't believe there is a single day when the nursery school teachers and the house parents are not having informal chats or talks about the children. We try to have a co-ordinated program in school and out of school, be-

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cause we are interested in the whole child, and we don't want to take this little child away from his home unless we are going to make him a better and more wholesome individual.

Our daily program is similar to the others described. The children come to school at 8:30 in the morning and they remain in the school building until 11:15. At 11:15 they return to their residence hall where they have their large noon meal and they take a nap or rest until two o'clock. At two o'clock they return to the school building and are in school until 3:15.

During both morning and afternoon sessions, we have short group lessons, very short at first, and then a great many individual periods for speechreading, speech preparation, and finally speech. Exactly what we do during these periods will be discussed later on.

The rest of the day we approximate the program of the normal nursery school—we play with the indoor equipment, we have milk and crackers, we practice good health routines, we have great fun using the excellent outdoor equipment at Gilbert Hall —it consists of large slides, swings, seesaws and sand boxes and wheel toys.

We are very fortunate in having all nature at our very doorstep, so we have a variety of science and natural experiences. In the fall we go out and pick grapes and apples and pears, at Hallowe'en we go and see the pumpkins on the vines, and all winter we slide and coast and make snow men and snow balls and watch the big icicles. We love feeding the big flocks of pheasants that come back of the residence halls, and sometimes we are fortunate in having little brown bunnies. The children learn a great deal from this type of experience.

In the spring we have a very rich background for language and speech preparation. We pick the wild flowers, and I believe the children love the dandelions as much as anything else. They like to hike to the creek, they captured several crawfish, and we also had a very interesting flood. Several weeks ago we had a small tornado which did not touch any part of Flint except our campus. At that point it ripped 25 feet off one of the residence halls and felled 20 trees. Ever since, when the sky gets dark, we are asked whether the building is going to fall down! It was an excellent lesson—nature teaching children about nature and what happens when two clouds from opposite directions meet over our school campus.

These are just a few of the delightful things we can do on a large residential campus, and if we use them the right way, they can give our children a very good background in speechreading and speech preparation. If the teacher has been out with a group, talking all the time, when the group comes back a picture book, with children doing the same things, gives the speechreading right there. The children have absorbed a great deal of material this year in that way.

At the Lexington School

CHAIRMAN VORCE: I think I can safely say that our set-up at the Lexington School is very similar to those that have been described for you today. The one place where we are very different is in the tutorial system we have set up this year. We have around 70 children who are five years of age or under, and these children are divided into three main groups—nursery I and II, and kindergarten, which is a bridge between the nursery school set-up and the work they will be getting next year in their more formal first grade work.

These children have been placed approximately 26 in Nursery I, 22 in Nursery II, and 22 in the kindergarten. The children in each group are in large playrooms or outdoors, and spend the morning together doing the kind of activity they like. We are very proud of the fact that a great deal of freedom exists. On nice days they go outdoors, and on days not so nice, stay in and do either active or quiet work. At the same time there are tutors who take the children one by one from this group and work with them individually in a room where no other children will distract them.

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In Nursery I there is one full-time tutor, and she is assisted by the eight teachers in training—there happen to be eight in the class this year—under Miss New's direction. In that way, every child in the nursery is taken in for speech preparation and training every day. The amount of time he is given varies with what he is able to do. If he can work only five minutes, he works only five minutes; if he can work one-half hour, he does so, and during the year you see the attention span grow so that the child who could work maybe only five minutes the first of the year can work 15, 20 minutes or a half-hour by the end of the year.

In Nursery II there is one full-time tutor and one part-time, who do the same kind of thing, except that the children are a little older there and can sometimes work in groups, maybe three or four in a group. At the same time, it is still an individual matter and the child does what he can do. If he needs to work alone, he works alone; if he is ready to work with someone else, he can.

The kindergarten is still another step. The children do more co-operative work, do things together, and work for longer periods and in larger groups.

We also have children who go home every day and we have children who stay at school. I think in each case the set-up is very similar to those you have already been told about.

The Child's Point of View

You have had a peek inside the schools —you know what goes on—but what is a nursery school, what does it mean to a hearing child? I was very glad to hear Miss Engel mention one of the things she liked about our special education—that we considered the child first. In this particular respect we want to consider the ordinary child first. What is a nursery school to a hearing child?

Miss McCabe is a specially trained nursery teacher and will tell us a few things about what nursery school means to a child.

Miss McCabe: Having come as a lay person into this field, I felt very much interested in children as children. I have now become completely absorbed in children as deaf children, but I find that there is no sharp line of demarcation. Treat your children as you would treat any children, and you have them with you from the first.

What is the meaning of nursery school to hearing children? I am not going to give you a long dissertation, I am just going to ask you to visualize yourselves as Alice in Wonderland was, pushed down to table top height. You reach up for a doorknob. You see a chair and you have to climb to get up on it, if it is an adult size chair. When you look out of a window, you don't see anything much but the sky and a little of the trees; if you stand on your tiptoes you see the cars go by—that's a child's world—at three, four and five.

It's often very good for you—I know you must do it—to get down on your heels and see the surroundings as your children see them. You get a different perspective.

Therefore a nursery school, first of all, means to children a place where the surroundings are styled to fit. The chairs fit, they can put their feet on the ground; the play equipment fits, even the little lavatories fit—they are all scaled down to size; the wash bowl, if it is not down, has a step up to it, so that you can wash your hands without having to put them up here (demonstrating) and have somebody swish water on them. It means a lot to a child.

The next point is that a nursery school gives the child an opportunity to help himself at a leisurely pace. As I sit and watch these children trying to comb their hair in the morning, I think, "If I could only have that comb and give it a couple of swipes, then they would be finished." I wait, and after several days of combing their hair all wrong, all of a sudden they realize that if they go like this (gesturing), their hair is the way it is supposed to be; and they have learned something.

It is the same with any other type of self-help. Take the eating. Instead of long

knives and forks, we have salad forks, which any parent can substitute, so that the fork does not start out here (indicating) before it starts coming into your mouth.

Also, children in nursery school have an opportunity to explore relationships with their peers and with adults; they can find what it means to grab away a toy from another child and instead of having him retreat, have him come up fighting, and what they have to do to defend themselves, and what they can do in sharing. They learn a very great deal, if you can stay out of the situation, barring bodily harm, and let them learn lessons without interference.

That is the type of thing we try to do a great many times. When on-lookers see nursery schools, many times they think, "Why do they let that child beat up the other one?" The nursery teacher has known the two children and knows how good it is for the one child to exert some outgoing tendency, instead of taking it in all the time. It is never done without thought and plan, though, in the nursery teacher's mind.

Also, the nursery school gives the child the security of regularity and consistency, and those are the keynotes to stable child development, no matter where the child is, or what child you are working with.

Now, the meaning of the nursery school to the child who is deaf has all of these parts and has additional components. Perhaps he is a child who has been hovered over by a mother and others who are not quite sure what to do and therefore overprotect, who swaddle the child in cotton batting, do everything for him. The chance for that child to exert some of its own individuality also helps the mothers who have not known just what to do, have given their children anything, permitted them to do everything, and consequently have little tyrants on their hands. Those children have the experience of groups, of an adult who will stand by and help them when necessary, but also will encourage them to activity.

The nursery school gives these children experience with sand play, water play—you saw the babies in the nursery room pouring water from one pail to another and dibbling with their boats—soap bubbles and finger play without the danger of making a mess that there is at home. You saw them in the doll corner having the opportunity of getting rid of some of these feelings of rivalry which have to come up and cannot be too clearly explained, when they see a smaller child in the family. We have a life-size baby doll and a rag doll which can be batted around without too much harm, and you see some of the working out of the feelings of frustration that these children have.

You saw this morning the children playing with the doctor's kit. I think we have worn out five or six of those. These children have a great deal of interest in hospitalization and in contact with doctors and nurses which they have experienced more than other children, and so they put on their glasses and they put the stethescope to the doll and each other and therefore have some of this fear and tension released.

I think our last point in nursery school with deaf children is the opportunity which we have started and hope to expand for the parents to see their children not as close as one to one, as they must have originally, but as part of a group, as someone out there that they can look at just a little more objectively and perhaps enjoy in a new way.

Adaptations for the Deaf Child

CHAIRMAN VORCE: You have seen the physical setup, the thing that makes a nursery school a place; you have seen the child who goes into the nursery school. Now, how about the deaf child? What do we do over and beyond what has been discussed at this point, to teach the deaf child speech or speech preparation at this age? What do we do to teach him speechreading, how do we do it, what results do we get?

Miss Gilmartin, will you tell us? I am sure after the demonstration, that we are all anxious to know more about your vibration method.

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MISS GILMARTIN: The method of teaching speech at the Detroit Day School is called the Tadoma Method. I think it is more familiarly known as vibration. The name, Tadoma, comes from a combination of the names of two blind-deaf children Miss Alcorn taught and with whom she used the vibration method. It really means feeling your voice or substituting the sense of feeling for the sense of hearing.

In Group I are the babies. When they first come in, we put the emphasis on sense training games, that is, teaching them to match pictures, watch things that we do, copy them. We give vibration and lipreading to the babies at the same time; that is, we put their hands on our faces and they learn to feel the word "jump" and see the word "jump" and so on. They see the word "bow" and feel the word "bow." We give them a great deal of that the first year in nursery school. We also give a great deal of tongue gymnastics, particularly before a mirror—that's because they need the muscles of their tongues strengthened.

They are not given any formal speech or any formal acoustic training. We do let them take turns listening to a radio that is equipped with a headset.

In Group II, during the second year, our emphasis is on more speech and of course, less on sense training. We begin about October and start them in their speech sounds, the vowels and consonants, drilling them in vibration. At the same time that we teach them a sound, we show them with a little card that the word is also written; we don't have them read it. Most people, I think, were afraid when they saw the cards this morning that we required them to read. We don't—it is merely to show them there is a written language and a spoken language. Some of the children by the time they leave in June can read some of the sounds—it is something they have picked up—the reading is not stressed with them.

After the vowels and consonants have been taught, they are put into words. As soon as the word is taught and the child says it, we have him connect the spoken word with the object. As you saw this morning, the child said, "a top," and I asked him to show me a top. When he said "cow," I asked him to show me a cow. For *mother* and *father* we usually have a collection of pictures and they learn to point out their own.

For auricular training, they are given a half-hour of work an afternoon. At first, maybe the first two months of this year, I let them listen to music and learn to beat out very simple rhythms. After they were using a hearing aid, then we worked with speech with the hearing aid.

Children are also taught primary colors and work on numbers from one to five.

I think that is about all we do. When you have 29, that's quite a lot to cover.

CHAIRMAN VORCE: I would be interested in knowing if you do any vibration work without sight.

MISS GILMARTIN: I suppose I am so familiar with it that I forget to mention it. Yes, we do. With the babies, we give vibration and lipreading at the same time. The second year they get lipreading without vibration, then gradually we start giving them the vibration in which a card is held in front of the mouth and they understand the word purely from feeling it. One period I give lipreading and vibration together, then I have another period for plain lipreading, and still another for vibration without seeing.

Testing Problems

CHAIRMAN VORCE: Dr. Lane, could you tell us something about the Central Institute methods?

DR. LANE: I think some questions have come in relative to testing the deaf child, and I am going to mention the mental testing of the nursery school age deaf child first. Any standardized performance test can be used, provided you remember in its selection that the test must be non-verbal, both in the performance of the child and in the directions given by the tester.

I have used the Randall's Island performance series quite satisfactorily and suc-

cessfully over a number of years. I received a letter recently saying that the manual was out of print. I have not had a chance to check on that myself and I am sorry if it is true, but there are a number of good tests on the market.

There are problems that come up in giving mental tests to deaf children. I think one of the first and more difficult to handle is that of speed—so many mental tests are dependent upon speed of performance for scores, and you know it is difficult to hurry any child and especially it is difficult to hurry a deaf child, and there is no way you can tell him to hurry. On many of the tests which they say are non-verbal, you will find such instructions as "Do this as quickly as you can," "Put the blocks in the box fast," and it is extremely difficult.

One way I have gotten around it is to have something very attractive to do next. If I show them that there is something else coming, they are so anxious to get to it that they will do the task quickly. In other cases I use a stop clock rather than a stop watch, and after the child is familiar with the fact that it is a clock and it is moving, he no longer looks at it and he knows in some way that he is being timed.

Another problem you encounter is difficulty in coordination. That is, we find some deaf children, where there has been complete loss of hearing or where there has been an upset in the sense of equilibrium as well as loss of hearing, who are definitely poorly co-ordinated and in a performance test will not do well because of that.

Then in other cases, the child's co-ordinations are not normal because he has been over-protected at home and has not been given an opportunity to learn things by handling them, as every child learns. We usually tell parents to permit the child to pick up things and handle them and learn how to manipulate things, to button his own coat, do things for himself, even if it is a little difficult to stand by and watch him do it the wrong way or take a long time to do it.

It is important that the psychologist or tester have good rapport with the child; a child does not know what is going to happen to him and does not know why he has been taken from the rest of the group. If he is acquainted with the psychologist, and he or she has had some opportunity to play with the child before the test, you will get much better co-operation.

The fatigue of the child enters in. Most tests require about one hour, and it is difficult to have a deaf child sit for one hour even if you are changing the game and changing the position. I have had them stand up, sit down, walk around between test items, because concentration for a solid hour is more than can be expected of young children. I have broken the testing period, have done it in two sessions.

With some children we find very poor concentration that improves greatly with nursery school if the child is capable of it. You are not quite certain sometimes on the first test whether a poor attention span is due to lack of ability to concentrate or whether it is lack of development of that ability.

Watch very carefully concentration testing if you have a spotty group of distributions. That is, if the child is capable of doing two or three tests at normal age and then falls down on one which may drag his entire score down into a lower I.Q. level, be careful in the interpretation of your tests to look at the various items in the test rather than at your mean or median score.

Now, it seems as if I have set up a large number of difficulties in testing children, but it is still a very worthwhile procedure.

In the field of testing, we also at Central Institute attempt hearing tests; so far, these are nothing more than conditioning techniques similar to those that you saw Dr. Ewing give two years ago at our Association meeting.

We have tried to standardize them a bit further by controlling the intensity and having the teacher use the intensity meter to indicate the strength of sounds and the strength of the various noise makers. We are hoping to find that we don't need to use as many devices and also to standard-

ize a bit further. I don't think the results are ready for publication yet, but we are working on that field of testing also.

CHAIRMAN VORCE: Mrs. Watson, will you tell us about your speech and speechreading?

Using What Life Has Provided

MRS. WATSON: The only thing I would like to emphasize further is that we stress speechreading through life situations wherever possible. I think the children find it much more interesting, rather than sitting down with a series of pictures, to go out and have the experience whenever possible or to have the real objects at first. We find we accomplish a great deal more this way than by starting out with pictures.

In the speech situation I try to do the same thing. We try to provide a very rich background of play material and sometimes the first week or two I just sit back and listen to the children.

One of our new groups this year appeared to have no hearing, but they were still babbling beautifully and here were all these beautiful sounds, *ee,* and *da-da* and *ma-ma* and things that we work so very hard for consciously. I saw a little tot giving a perfectly beautiful "k" and I thought, "My goodness! Why should I work for that—he already has it." I do very much the same thing that you do with your normal baby at home when you want him to say da-da and ma-ma—I watch him at play, and if he gives this sound, I rush over and try to get him to repeat it. It may not be successful for a long time, but if I play around with them, put their hands on my face, say the same thing back to them, put my hand on their faces, say "da-da," while they may look at me and think, "Well, isn't she silly!" after a while they get the idea. A piece of candy is a very nice reward if they do it, and they get much enthused about all these things that they can do. It is really amazing all the things you can find that the children already have.

For years I had been sitting in front of a mirror trying to produce a good *ee*—poking, pushing, manipulating, having a lot of trouble. But I found that so many children just have an *ee*, especially if we get them young, get them while they are still babbling. If we don't get a child until he is six or seven, quite often he has passed that period, but if we can get the three-year olds, if they have been allowed to express themselves, they are still babbling, and even with your very deaf child, you can often get very good results through this sort of program.

I keep the whole words that the children can approximate or say in a book. It has simply a large picture on a page. They open up their book, point to it. If they say it quite well, we put an entirely different picture in the book.

Beginning Reading

The only other thing I do that is particularly interesting, I think, is the way we taught them to read their names. I don't teach three and four year olds to read generally, but I did want them to know their names, because their overcoats, hats, dresses, tooth brushes, so many things become confused.

I started out with some very interesting pictures. The first day of school they are very proud of their new clothes, so we brought the children up, used colored chalk, drew large pictures, had pictures of all the children all over the board, and a picture of the teacher. About a month later we removed them. The next day they came in, looked for their pictures; they wanted to see their own pictures. We put them back. Each day, as they had clean dresses, we had to change our pictures—that's all they were interested in. A little while after that, I slipped in one day and put some printed names in front of those pictures. They didn't notice that; they were still interested in the pictures.

Finally one day a naughty child walked up, mad at his friend, and erased the picture from the blackboard. The next morning when they came in, all the pictures were gone. I put their names up in colored chalk to match dresses or sweaters,

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and in that way the pictures disappeared and we had the printed form. It was still in color, they were not reading names. They would go up to the board, and if the letters had some red, that was Mary; if they looked at blue, that was John, because Mary had a red dress and John had a blue sweater, but they were actually beginning to read. Then suddenly one day we erased all the names and put them all in yellow.

There was complete confusion, but then we really began to read the names. By that time they had been in school six months and they made the transition with no difficulty after the first day. So I might say that our three and one-half and four year olds did learn to read something, but it started out as a game and it was just to provide an essential tool for identifying things.

Toward the end of the year, some of them began, every time they would see "C" or "S" or something, to identify it as their name. If he saw the word "Top," why, Terry thought it was himself because he saw the "T," but I ignored the whole thing. I think next year these children will be ready to start a limited program of reading.

CHAIRMAN VORCE: I would like to reinforce some of the things that Mrs. Watson said about the teaching—we try to do it in natural situations wherever possible, so that we start speech as a meaningful thing and expect it to come as an outgrowth of something meaningful.

I brought along one of the speechreading books we use. There is no writing on it but it is full of pictures, words that are within the child's realm of interest and in his daily experience—his coat, his hat, his father, his mother, the dog, the cat, and in as large and clear pictures as we can find.

Parent Relationships

We have had a long and interesting discussion on several phases of the child's life; there is one important one we won't have time to cover—the parent relationship—but we have seen what we can do in a school to help the deaf child, how we can set up a system of schedules so that we can get the best and the most out of the things that we try to do.

MISS MCCABE: Before we close, I would like to mention one thing in favor of parent relationships. I believe several of the large residential schools are doing it—I know Jacksonville is, and we at Flint are doing it—we have a parent institute in the spring. For two weeks any mother who is interested and who has a nursery school child and is a resident of the State of Michigan, may come to the School and take a regular training course if her child is enrolled in the nursery group. Therefore when a lot of our children come back next fall, they are not going to feel so strange because they have already been in our school for two weeks this spring, they have had a very enjoyable time. Their mothers are not going to weep quite so hard because they have been to school themselves. They know what Johnny is going to eat, they know his teachers, and we find it makes a very nice break for the new children. I think perhaps that is one thing residential schools might be interested in.

MISS VORCE: Not that we are through talking—we have not exhausted the things we would like to say, by any means—but this does conclude our panel.

Discussion

Perhaps while you have been sitting here, there are questions that have entered your minds that we have not answered. If so, we will be glad to answer anything that we can at this time.

PRESIDENT O'CONNOR: I wish to thank the panel—Miss Vorce, particularly, as the chairman—for their very able handling of this subject. I think we have time for a short general discussion.

There is no question but that the parents' part in the education of the deaf has been seriously under-developed and that its potentialities have not been fully evaluated.

Our program at the Lexington School has been very effective; we regard the parents' participation in our school life as one of its most important parts.

We have the advantage, of course, of having our parents within close traveling distance of the school, so that we are able to have a meeting each week or at least every other week, and to give the parents an orientation program, with observations which not only adjust them to the problem of deafness, but lead them on to constructive activity.

Now, that leads me to another observation—it seems I am always getting myself on a limb and I am getting out again—these parent institutes and parents' correspondence courses are a very, very effective means of conditioning a deaf child for admission to a school for the deaf. I would like to throw out a word of caution, however, against trying to teach parents to become teachers in these short institutes or by correspondence.

The possibilities of opening up a young deaf child's mind through various experiences are unlimited, but undoubtedly we all agree that parents should move in very safe channels. Lipreading and possibly silent reading activities would be safe channels; speech teaching activities, I think, are definitely not safe channels. I think any speech activities engaged in by parents should be so safe that no permanent speech damage may be done, such as establishing faulty phonation patterns, or faulty articulation skills.

MRS. ROESSLER (Chicago, Illinois): I wish that when my child was of nursery school age I had had the opportunity to have these orientation classes or the help that is being given now at the Illinois and Michigan Schools. I didn't have, either, the correspondence help that many of our nursery school mothers now have. I think so much of it and wish so much that I could have had this opportunity to know how to live better and to help my child accept his difficulties courageously and in the proper spirit, that I should like very much to see short orientation classes given in day schools.

VOICE: I would like to know what parents could do during the summer? My child will soon be five years old.

PRESIDENT O'CONNOR: What can a mother do in the summer time? She can subscribe for the VOLTA REVIEW, join the Tracy Clinic Course, go to the Illinois or the Michigan Summer School, or ask the Volta Bureau to help find some place where a course is offered.

MRS. VORCE: Never give up talking to the child.

MISS ALCORN: We urge all parents who have prospective candidates for school to visit the school often, and Miss Gilmartin and Miss McCabe tell them what to do for those children. Sometimes they come in with children 18 months old.

MR. GRACE: I would like to make this observation. There happens to be a child in my school whose mother has had Mrs. Tracy's Course. We have observed that that child is better adjusted and is doing better work than other children of the same age. It indicates to me that that mother has been greatly helped. I think we in the Day Schools have a better opportunity to have parent participation than some of you folks do. Not a day passes that we don't have from one to ten parents in the School, well aware of what is going on. Our teachers advise with them and I think it's a great help.

VOICE: I would like to ask Miss Alcorn, how do you contact parents who have children as young as eighteen months?

MISS ALCORN: The doctors often send them in. Of course, we don't always get them, but a great many of them are advised to come with these young children.

DR. RANKIN: We find that same plan satisfactory in the residential school. We have parents come at least twice a year from as early in the child's life as possible, and we work with those parents, have a program laid out for them—a program of parent education, preparation of the child for school. We find that works somewhat better for us than the institute that we tried some years ago.

PRESIDENT O'CONNOR: Anything else? Well, it's about closing time, and again I want to thank the panel members for their very excellent presentation.

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Special Business Meeting

Tuesday Afternoon, June 22, 1948

PRESIDENT O'CONNOR called the convention to order at 2:00 p.m.

PRESIDENT O'CONNOR: There are no minutes to be read at this time, so I will proceed to the several questions that are pertinent for today in the Special Meeting.

For many years, a question has been raised frequently about the advisability of changing the name of the American Association to Promote the Teaching of Speech to the Deaf, mainly because of its length. Through the War, when the paper shortage was very critical, this objection was serious. Signing a check is another of the discomfitures attached to that long name. In addition, I have found that before I can complete the naming of the organization to which I belong, people have lost interest in me and the organization.

It seems advisable to give this question very serious consideration today. In preparation for this, the necessary legal procedures have been carefully looked into and legal counsel has been retained for the purpose of effecting the change, if the members so decree.

About five weeks ago, a letter on this subject was sent out to the members of the Association. The response was very, very good. Those who responded were practically unanimous in the idea that the name should be changed, and some very interesting names were proposed.

In preparation for the meeting this afternoon, the Board of Directors met this morning, considered the names, and adopted a resolution which I shall read to you.

The Directors narrowed the list down to two, and these two are proposed for you to select from. In making the choice, four points were kept in mind as essential: (1) the name should include the word *Volta*, (2) it should say *for the Deaf*, (3) it should continue the title *Association*, (4) it should be as short as possible.

It is unfortunate that our title cannot include the name of our famous founder, Alexander Graham Bell, but it seems impossible to do that and at the same time have a short name for the organization.

The two names selected by the Directors are exactly the same, except for one word, *Speech*. To include it adds to the length, but the avowed and stated and incorporated purpose of the Association has to do with speech. I am telling you about these considerations so that you can make your final decision. The two names are *Volta Association for the Deaf* and *Volta Speech Association for the Deaf*. One has five words, the other six. The one you select will be embodied in the resolution on which we will vote at our annual meeting.

(President O'Connor then called for a show of hands on the two names, and *Volta Speech Association for the Deaf* was chosen by a large majority.)

Our resolution, then, reads as follows:

WHEREAS, It is believed by the Board of Directors of the corporation that it would be convenient and desirable for the corporation to amend its charter to change its name from The American Association to Promote the Teaching of Speech to the Deaf, to Volta Speech Association for the Deaf, Incorporated, and that such amendment to the charter of the corporation would facilitate the business of the corporation as is presently authorized by its charter and

WHEREAS, It is felt desirable that the Constitution and By-Laws of the corporation be amended to change the name of the corporation therein from The American Association to Promote the Teaching of Speech to the Deaf to that of Volta Speech Association for the Deaf, Incorporated,

THEREFORE, BE IT RESOLVED, That Article First of the Certificate of Incorporation shall be amended to read as follows:

"That the corporate name by which said association hereby to be formed shall be known and distinguished is and shall be Volta Speech Association for the Deaf, Incorporated."

And that the Certificate of Incorporation be amended wherever the name "The American Association to Promote the Teaching of Speech to the Deaf" appears to that of "Volta Speech Association for the Deaf, Incorporated."

AND BE IT FURTHER RESOLVED, That the Constitution and By-Laws of the corporation be amended to substitute the name "Volta Speech Association for the Deaf, Incorporated," for the name "The American Association to Promote the Teaching of Speech to the Deaf," wherever such name appears in the Constitution and By-Laws of the Corporation.

AND BE IT FURTHER RESOLVED, That the officers of this corporation be and they are hereby authorized to take the necessary steps to make this amendment effective pursuant to the provisions of Section 3875 of the Code of Virginia, as amended.

AND BE IT FURTHER RESOLVED: That a special meeting of the voting members of the corporation has been called for the 22nd day of June, 1948, at 2:00 o'clock, at the Detroit School for the Deaf, and that such special meeting be requested to consider the herein written resolution by the Directors of the corporation relating to the change of name of said corporation, and that the resolution by the Board of Directors of the corporation favoring such change of name of the corporation be submitted to the annual business meeting of the voting members of the corporation to be held on June 25, 1948, at 9:00 a.m. o'clock, at the Detroit School for the Deaf for a vote of such voting members of the corporation as to whether or not they desire the proposed change in the name of the corporation and whether or not they desire to ratify, affirm, assent to and adopt the resolution herein adopted by the Board of Directors of the corporation relating to such proposed change of name.

AND BE IT FURTHER RESOLVED: That the Secretary of the Board of Directors transmit a written copy of the resolution adopted by the Board of Directors relating to proposed change of name of the corporation to said special meeting of the voting members of the corporation and to said annual meeting of the voting members of the corporation.

* * *

That resolution has been adopted by the Board of Directors to be presented to you for your information today. Then on Friday you will be asked to vote on this resolution, yes or no.

You will also be asked on Friday to decide on certain minor constitutional changes incidental, in part, to the change of name. You all have copies of the present Constitution. The amendments I will read to you have been proposed by the Committee on the Constitution, of which Miss Bodycomb is the Chairman.

Article I, Section I. This organization shall be called the Volta Speech Association for the Deaf, Incorporated.

Article V, Section VII. The absence of any Director from three consecutive annual meetings of the Board of Directors shall automatically create a vacancy in the Board, which may be filled by the remaining members.

Article VI, Section I. The Association shall have as officers, a President, two Vice-Presidents, a Secretary, and a Treasurer, who shall be chosen from the membership of the Association by the Directors at their annual meeting, to hold office for one year, and thereafter until their successors are elected.

The proposed alteration in Article V simply adds a new section to the Article. In Article VI the only change is the omission of the office of Auditor. Since our books are carefully audited by certified public accountants, the process of having them audited by an officer of the Board seems superfluous.

Those are the matters that you will be asked to vote upon at the Annual Business Meeting on Friday. This concludes the business of the Special Meeting.

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Speech for the Deaf Child

Tuesday Afternoon, June 22, 1948

THE panel on Speech followed immediately after the adjournment of the Special Business Meeting.

PRESIDENT O'CONNOR: Will you come forward, please, Mr. Grace, and the panel for this afternoon? I have asked Mr. John F. Grace, Principal of the Gallaudet School, St. Louis, Missouri, to preside this afternoon and introduce the panel.

MR. GRACE: Our topic this afternoon is "Speech for the Deaf Child." If I had not said so often that language is the greatest problem in teaching the deaf, I would no doubt say now that speech is the greatest problem. I suppose that if we lined up 50 topics to discuss, somebody would say that each one was a great problem. It all boils down to the fact that teaching the deaf is sometimes considered a problem. From my observation, however, I believe there is a great deal of happiness gained from teaching the deaf, even with all our problems.

Our first speaker needs no introduction. Ever since I have been in this work, her name has stood out as that of a teacher well qualified to discuss any phase of the education of the deaf. Many of you know her, and I am sure that all of you have seen examples of her work. It is a pleasure to present to you Miss Enfield Joiner.

Our Speech Teaching Heritage

MISS JOINER: One hundred years ago this year of 1948 there was born in Vermont a little girl who was destined to become known wherever deaf children are taught our English tongue. A delicate child, the youngest in a well-to-do family, she grew into a young woman with a definite urge to live a life of service to her fellowmen. She entered Mount Holyoke College, then the leading college for the higher education of women in this country, and after leaving college, taught for a short time in the public schools.

Even as an inexperienced young teacher her results must have attracted wide attention, because at 21 she was asked to take a position in a little school, founded in Northampton, Massachusetts, only three years before, where deaf children were being taught speech and by speech. She accepted the offer, and in her modest autobiography, "Years of Building," Dr. Caroline A. Yale tells us, "From the first there was a fascination about the work which was irresistible, and so far as I can recall, there was never a moment's doubt on my part that this was a work which I should like to do."

For more than 60 years she gave herself, body and soul, to promoting the welfare of the deaf child, and we bear witness today to her remarkable rightness. By the trial-and-error way, proving all things and holding fast to that which was good, a method of teaching the deaf was evolved.

In a few years this method began to attract attention throughout the country. Visitors from other schools for the deaf where the manual method of teaching was practically in universal use went to Northampton to see what was being done there, and many became convinced of the superiority of the oral method. Among the early visitors was Dr. A. L. E. Crouter, the superintendent of what was then numerically the largest school for the deaf in the world.

Dr. Crouter, after spending a morning in Miss Yale's own classroom, became an ardent convert and an influential champion of oralism. I cannot in this anniversary year offer my tribute of admiration and gratitude to Dr. Yale's memory without including him. It was not what was said or written or theorized about the work of these pioneer proponents of the oral method in this country that convinced the profession of its immense superiority—the quality of the results became an incontestable argument.

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If oralism is to hold its own and the number of children in our schools taught orally is to increase, it will be because teachers meet the challenge by securing intelligible, usable, and pleasing speech. We need more speech, more enthusiasm about speech, more interest in speech, and the best way to get them is to secure better speech in both our oral and so-called combined method schools. A number of teachers in various schools seem to feel that at the present time, speaking generally, the status of oralism has become static, that it needs "a shot in the arm."

Why? Is the quality of our speech failing to command respect?

Let us consider for a few moments why the speech in too many cases is not impressive. First, I would say that there is a tragic lack of adequately trained teachers. I will grant that there have been a number of teachers who have come into the work without having had any special training, who through conscientious efforts of their own and contact with experienced teachers of the deaf, have become excellent teachers of speech. But they gained knowledge and efficiency at the expense of their classes, for in this highly specialized work of ours the "know-how" is a prime requisite. There are at present a number of schools in our country not fully staffed by trained teachers, and on all sides the demand for good, experienced teachers greatly exceeds the supply. I heard within the last year of a day school in one of our large cities employing a staff of eight or ten where the only trained, experienced teacher was the head teacher herself. My heart went out to her.

Even before the war proved to be an excuse for this serious condition, the paucity of adequately trained teachers was alarming. Adequate training means that the teacher of speech should have a thorough and applicable knowledge of phonetics and that she should have a standard of excellence by which to judge her results. It is my opinion that the lack of such a standard makes many teachers accept poor speech. With a shrug of the shoulders, teachers too often take the attitude, "Oh, I suppose that is the best he can do," and that is that!

I once heard Miss Alcorn say that if one had to work a whole year just to get good voice from a child, it was well worth the time spent.

Speech is the product of both position and movement of the organs of speech. Movement means passing smoothly and rapidly from one position of tongue, teeth or lips to another. Automatically, positions are modified by positions of sounds which precede and follow them, and the fundamental, natural law of speech is that the position of a sound must not be relinquished until the position of the sound which follows it has been assumed. This results in an overlapping of sounds as one wave overlaps another, with the crest of a wave making breaks between. In this way is the syllable, which is the unit of speech, formed.

Now, the syllable, even though we designate it a unit, consists of parts. That is true of all so-called "units," even of the atom, the invisible and until recently the indivisible atom, which is the "unit" of all material substance. The syllable, therefore, may consist of a vowel, or of a consonant that can be so strongly vocalized that we may coin a word and say that it has become vowelized, or of one or more consonants combined with a vowel or a vowelized consonant.

By way of parenthesis, the consonants which can be vowelized and thus form a syllable are *m*, *n* and *l* as used in such words as *rhythm*, *cotton*, *table*. If the syllable is perfect, its parts, one or more elementary sounds produced by positions and movements of the organs of speech, must be perfect. I am so old-fashioned that I believe in accurate, not "approximate" positions. The syllable, the word, the sentence may be compared to a picture puzzle where each part must fit into the other parts perfectly to create the desired effect.

Years and years of experience working with the speech of deaf children compel me to admit that it is much easier to talk about

accurate positions than to get them. Using sight and touch, many of the consonant sounds may be easily developed, but others require long, persistent, titanic effort on the part of both children and teachers. I need not say that among the difficult consonants are *k*, used both initially and as a breath-stop sound, *ng*, our dear old friend *s*, so evasive and hard to keep, *sh*, *ch* and their voiced equivalents. *R* used to offer me a hazard approached with dread and fear until I found out that one had simply to raise the tip of the tongue, start voice, shift immediately into the vowel which was to follow, and there it was, well out on the fairway. I think that element is best presented in a syllable, *rar, ree, row, etc.*

I once heard Dr. A. L. E. Crouter say that good speech depended on good *vowels*. In using the tactile method most vowels are easy to develop by imitation and contrast with other vowels, though *ee* often gives trouble. The diphthongs are not difficult to develop, but *o-e, a-e, i-e, ow* and *oi* are hard to hold because of the tendency to omit the shorter and secondary part of each. It is that glide toward the second position that gives character to each of these sounds and it is most important that it not be elided.

Fortunately, we teach only one sound at a time and I cannot too strongly emphasize the necessity for preparation. And the most important phase of the preparation is tongue gymnastics. Until the child can control that inactive and sometimes too active little tongue he cannot get and keep the accurate positions you are working for.

In the early development of speech, and for use later in corrective work, I think speech diagrams are of great value. The conventional type, the profile of the human face looking to the right, showing nose, mouth, chin, teeth, tongue, hard and soft palates, and the position of the larynx help fix in the child's mind the positions of consonant sounds. Miss Alcorn has devised an excellent series of full-face diagrams to be used in fixing the lip modifications of various vowels.

In the early years I believe in the combination drill, though I know many teachers consider it a waste of time. I have found it of great value in helping the child take new words from the lips and in making new words *speak themselves* when encountered for the first time in print or writing. Thoroughness in preparation, securing accurate positions and good voice take time and persistent effort, but they pay in the end.

A second reason for poor speech in our schools is that too often a teacher will fail to regard speech as a subject in its own right. She gives thought to the preparation of lessons in every other subject she teaches, but she fills up the "speech period" with anything that comes to mind, a routine running through an element or drill chart; having some little verse, that to her class is merely an aggregation of words signifying nothing, read from the blackboard.

I believe there should be just as definite an objective for each year's work in speech as there is for each year's work in language or any other study, and in order to reach that objective there must be careful preparation for each day's "speech period." So often I have heard a teacher in the middle or the upper school say, "Yes, his speech is poor, but he had poor speech when he came to me."

Would she be content to say that he had made no progress in any other subject of the grade?

Paradoxically, a third reason for poor speech is that there are teachers who consider speech only as a separate subject having no connection with other subjects. This is particularly true in schools where classes rotate. You may go into, say, a geography class, and find that Johnny or Tommy can't speak the name of his own country correctly, and have the teacher offer the familiar alibi, "I don't teach the class in speech."

Alas, she doesn't! No matter what subject matter is being presented in every oral class, the teacher should feel herself responsible for teaching speech, speechreading, and language during every period of the day. As to speech, she must train

her mind to function so as to operate as it were on a double track, of hearing *what* is said and hearing *how* it is said.

In my own experience, after giving hundreds of intelligibility tests, I found that the chief cause of unintelligibility was the *elision* of sounds, chiefly final consonants and the shorter parts of diphthongal vowels, and I concluded that carelessness was the chief cause of poor speech. Furthermore, I concluded that we have careless speech because we accept it, and that we accept it because we do not hear it with both our ears and our minds.

A fourth cause of poor speech is tenseness on the part of the teacher. She unconsciously communicates her tenseness to her pupils and this results in self-consciousness and constriction. There can be no easy, fluent speech without normal physical relaxation on the part of the speaker.

I should like now briefly to enumerate some of the requisites of good speech. Each plays so necessary a part that no attempt is made to list them in the order of importance. I believe that good speech depends on:

1. Quantity and control of breath.
2. Quality, pitch and intensity of voice.
3. Habitually accurate positions for all elementary sounds.
4. Complete mastery of the vowel and consonant charts, both of primary and secondary spellings.
5. Ease and smoothness in combining elements to form syllables, syllables to form words, words to form phrases, and phrases to form sentences.
6. The proper accenting of syllables.
7. Phrasing or grouping words according to meaning.
8. Expression or stressing key words in sentences.
9. Inflection or modulation of the voice, especially at the ends of sentences.
10. Facility in speaking, enabling the speaker to approximate the natural rate of speech.

In teaching other subjects the teacher follows a basic pedagogic law—she begins with the simple and the obvious, and step by step, she passes from the known to the unknown. Not so with speech. At the very beginning of formal instruction she must plunge the deaf child into the intricacies of combining elements, of accenting syllables, of phrasing, of remembering phonetic markings, at the same time of thinking in speech. The child is expected to integrate so many difficult performances, to remember so many conflicting things. It must seem strange to him that at one time the letter *t* represents the sound of *t-* as in *top* and also represents the sound of *-t* as in *got*. Or that the letters *o* and *u* make *ou* as in mouth, *oo* as in soup, *o-e* as in dough, *-u-* as in rough, and *aw* as in cough! One delightful thing about deaf children is that they usually accept without question what we give them.

There are ways of obviating some phonetic vagaries. I think the breath-stop form of each of the so-called explosive consonants should be given at the same time the initial form is given, and both forms should be presented as whispered or voiced syllables, using the natural vowel or short *u*, For example, when presenting the element *p* as whispered "pu," the breath-stop *p* should be given as whispered "up," also. When the voiced *b* is given as "bu," "*ub*" should be given, too. In the same way the teacher should present the two forms of *t, d, k, g*.

As another example of inconsistency, we have the child vocalize *m, n, l, r,* final *d,* and *w,* and later ask him to regard them as breath sounds when they follow non-voiced consonants. I used to find it helpful in introducing initial consonant combinations to follow the general fundamental rule of oral work which Dr. Yale always emphasized in her teacher-training classes, that the lip-read form must come first, the spoken form second, the written or printed form third. If each of these combinations is given as if it were a single element, *syllabically*, combined with the natural vowel, or indefinite voice, if you prefer, the non-vocal forms whispered as *pru, tru,*

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plu, smu and the vocal forms voiced with the vowel as *bru, dru, blu,* etc., all consciousness of *m, n, l,* and *r* can be eliminated and the transition to other vowels easily accomplished. Thus the principle is established that a voiced consonant following a non-voiced consonant loses, for all practical purposes, its vocal quality.

Before closing I would like to tell a little about an experiment tried in a school with which I was associated for fifteen years. I refer to the North Carolina School, then under the superintendency of the late Dr. E. McK. Goodwin, a strong advocate of the oral method. We came to feel that our speech was not what it should be, that we lacked definite objectives for each year's work, that we needed integration, continuity and more uniformity in our planning. In short, that it was all too haphazard, too devoid of systematic teamwork. We made for ourselves a seven-year instructional program, emphasizing each succeeding year one or more of the principles of speech, at the same time continuing and amplifying the work of previous years. It was our purpose, through a more thorough and if you like, a more regimented training, to acquire more knowledge of the principles of speech and more ability to apply them. We instituted what we called "written speech."

We required the pupils beginning with the second grade (the third or fourth year in school) to *master* the vowel and consonant charts. That didn't mean that we accepted mere memorization, which could be done one week and forgotten the next. It meant that the child had to recognize the sound group to which each sound belonged and to recognize it wherever he met it, isolated from its companions. He had to be able, in taking new words from the lips, to convert the spoken form into the written form by selecting with the aid of the teacher the correct spelling. He had to mark consonant sounds as breath, voice or nasal, and vowels as long, short or diphthongal.

In the third grade training for independent action was begun by having the child make bit by bit a phonetic classification of his vocabulary in note books. He helped from his own knowledge reorganize the charts, listing the consonants as breath, voice, voice nasal, and breath nasal, and the vowels as long, short, or diphthongal. All secondary spellings were numbered and identified by their numbers.

Each year some new principle, determining where the accent falls on syllables, dividing words into syllables, phrasing, speaking with expression, recognizing natural continuities in the study of phrases and sentences, became the main feature on the speech work. Frequent tests were given in "written speech," as well as for intelligibility and accuracy in sight reading in all grades.

The proper accenting or stressing syllables is one of the chief factors in the production of natural speech. So far as I know, the dictionaries give no rules for determining where accent falls. There are some arbitrary rulings to differentiate pronunciation when the same word is used as a noun and as a verb, as for example, the word conTRAST used verbally and CONtrast as a noun. A study of spoken words shows, however, that except in such cases as this, the *length* of a syllable determines the stress or force with which it is uttered. The length of a syllable is determined by:

1. The quality of the vowel it contains.
2. The number of consonants used with the vowel.

The exception to this rule is that in two-syllable compound words, such as toothpaste, ice cream, hand-work, when the original structure of the words is preserved, the syllables balance each other.

Both in two-syllable and polysyllabic words, either indefinite voice (or short u) or short i is substituted for the vowel represented by the spelling used in the unaccented syllable. This habit cannot be too early established. Even in the first words spoken the indefinite article *a* becomes -u-, as in "a car" or "a bus" and "an" associated with apple, becomes "unapple" in natural, rapid idiomatic speech. Perhaps the more meticulous will not agree with me, but that

is the way every-day speech sounds to me.

The objection may be raised that this sort of analytical study of speech may tend to make the deaf child self-conscious and to destroy spontaneity. We didn't find it so. We merely became more speech-conscious, and year by year carefully recorded tests showed a marked improvement in our speech. In the last analysis "eternal vigilance" is the price the deaf and the deafened must pay for good speech.

I have not touched on two phases of our work which have been of incalculable and amazing benefit in improving the speech of our pupils. I refer to the training of residual hearing and the increased use of the tactile sense in developing and correcting speech. It seems to me it is too early to evaluate the effect nursery school and pre-school training will have; besides, I have had no experience with this type of work except as an interested observer.

But I do believe that in the future, as in the past, new ideas, new aids, and the better application of existing methods will mean better and better speech. In concluding, my thoughts go back to the Vermont hills. On the stone which marks Dr. Yale's grave, there are these words, "Prove all things, hold fast to that which is good."

MR. GRACE: Thank you, Miss Joiner.

At this time I am going to ask Miss Agnes Stokoe of the Detroit Day School to speak to you.

Vibration in Speech Teaching

MISS STOKOE: I think we can agree that Miss Joiner has given us a very excellent presentation of the topic in which we are all very vitally interested, namely, speech for the deaf. Inasmuch as she closed her discussion by telling us something about the speech program of the North Carolina School, I should like to begin (since we are meeting in Detroit today) with a résumé of The Detroit School of Thought on Speech. I believe that it is generally known that "The Detroit Thought" is Miss Alcorn's Vibration Method of developing speech with the totally deaf child.

I should like to emphasize the fact that we don't consider vibration an end in itself, but rather a means to an end, and that end is (1) Pleasing, natural voices and (2) Fluent speech and correct articulation.

We begin to work toward that end the first day the child enters nursery school, by beginning vibration along with the other nursery school activities, a period of training which I like to think of in terms of a speech readiness program.

Tongue gymnastics are also begun at this time—as we stand for accurate positions, not approximate positions. In passing, I don't believe Miss Joiner old-fashioned at all in her stand for accurate positions. As I look about me in the world of fashion, the new of today is the old of yesterday, so a plea for accurate positions is the same as a plea for the new-old look.

In beginning vibration the child keeps his eyes open until he has "caught on" to lipreading. Then and only then is he told to shut his eyes. At this point I should like to correct a false impression which many people have about vibration, and that is, that the child shuts his eyes for a year. This impression is wrong. The child does not close his eyes until after he has begun to understand by lipreading.

I am going to repeat that once more, as I hope no one will leave Detroit with the wrong idea on this point: the child keeps his eyes open at first. After he has "caught on" to lipreading, then and then only does he shut his eyes—and then for only the vibration period. The length of the vibration period varies with the maturity level and ability of each child. He still continues to get lipreading with eyes open, after he has reached the stage where he shuts his eyes for vibration.

I should like to caution teachers on the importance of speaking correctly and naturally, because if the child feels indistinct speech, too rapid speech, he is going to reproduce that speech in the same mutilated way. The teacher should be careful to give the child the correct speech patterns, for speech is a very fine and delicate performance.

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The teacher must also try to overcome any nervousness on the part of the child. If she is conscientious about this, the child's speech will be much more natural. It will be free from the unnecessary and unnatural facial contortions of which some authorities accuse the deaf.

After literally saturating the child for several months with vibration (of elements, nouns and commands), his voice is tried. Here we have a tremendous responsibility, because the voice which we accept at this point is the voice with which the child will go through life, so it behooves us to accept nothing but a voice that is natural. If there is any evidence of strain or the voice has an unpleasing quality, speech should not begin at this time. Vibration, without a speech response from the child, should be continued for a while longer. We have had some failures where speech was begun before enough vibration had been given.

We feel that all the time and effort spent at this period are well worth while to assure a pleasing, natural, flexible voice.

As soon as the child can give enough elements for a word, such as a top, a tooth, a thumb, a mouth, he is taught to say the words—first nouns, then verbs, then simple sentences, on to more complex ones.

We do not use combination drills—we feel that words are much more meaningful, and that going from words to sentences is an aid to good straight-forward language.

Vibration is continued through the fourth grade. We feel that by that time the child's speech patterns are firmly enough set that he can go on from there without the intense vibration work he has had up to this point. However, I have found it an invaluable tool in speech correction in the intermediate grades.

Miss Alcorn's symbols are translated into diacritical marks in the sixth grade, but again, where a child in an intermediate grade was having a difficult time with a word, I have found it very helpful to go back to the symbols along with vibration.

If the child has been thoroughly saturated with vibration and the teacher is conscientious about her own speech, you won't have to worry about such things as breath control, voice quality, accurate positions, ease and smoothness in combining elements to form syllables and syllables to form words, proper accenting and phrasing, and proper inflections. They just automatically take care of themselves.

In closing, it's the day in and day out persistent and consistent effort that counts and adds up to good fluent speech.

We have proved the worth of vibration and we are holding fast to it.

MR. GRACE: Now may I introduce Mrs. Scott to you? She is Mrs. Elizabeth Scott, from the Parker Elementary School, Chicago.

Auditory Training Cannot Begin Too Early

MRS. SCOTT: The speech of the severely deaf child suffers seriously and is often unintelligible because it lacks modulation and inflection. Perhaps too much emphasis has been placed upon perfect articulation and not enough upon stress, proper phrasing, inflection and rhythm of speech.

If the teacher knows the range of a child's natural speech sounds before artificial training begins, she may be able to make the child aware of what he is already doing and so repeat his action. It may provide a short cut to the mastery of some speech sounds and help him to acquire them for voluntary use. He may avoid going through a special process to learn artificially sounds he has already been making freely.

We cannot begin too early in the training of the residual hearing of the acoustically handicapped child. It is in the early years that the sensory habits are established and patterns for adjustment are set. "Once the child develops faulty patterns a double task faces any one who would teach him to use his residual hearing effectively. He must be guided through the stages necessary to acquire auditory discrimination and any unfortunate sensory habits he has acquired must be broken down."[1]

The artificial method of making deaf children talk is a poor substitute for the

natural channel through which hearing children learn speech. Visual, tactile and kinesthetic clues are the channels through which the deaf learn. It is a laborious and time-consuming method which does not extract natural speech from the deaf.

Very few children are totally deaf, but some are slow in developing their first reactions to sound. Amplification has proved to be a valuable aid in teaching speech. Recent research has proved that when the ears can be used as a channel, through the use of hearing aids, the deaf more closely approximate hearing children. Hughson, et al,[2] made a study of the speech characteristics of children trained by the oral method and by the acoustic method, and showed how these characteristics compare with those of hearing children. Hughson, using a word list made up by Margaret Bodycomb, made electrical transcriptions of the speech of 366 deaf children, 8-21 years of age, from the Pennsylvania School for the Deaf.

Of the group, 248 had never received auricular training, and 118 were enrolled in auricular classes. Each child read Miss Bodycomb's word list, which represented all the vowels and consonants used in different combinations. The list started with the cardinal numbers. The grading of the speech characteristics was subjective; good, fair, or poor as compared with hearing children. Transcriptions were made of samples of hearing children's voices. Reading the same list of words, they established a criterion for "normal" or "good." A deaf child was poor if the word was unintelligible; fair if it could be understood with effort, and good if it sounded like a hearing individual, or at least, left no question as to the word pronounced. Hughson found that among all children with any residual hearing, an auricularly trained child was basically superior, regardless of onset, degree, or duration of deafness.

Under all conditions the speech of the auricularly trained children was more like the speech of hearing children. They show continuous improvement as auricular training goes on; this is not true of the other oral groups. Children who receive oral training without use of hearing, and are then put into an auricular group, are retarded in speech. In the group auricularly trained, those whose audiograms showed some acuity up to 2048 cps. produced elements that were practically normal.

In analyzing types of errors, the superiority of the auricular group is particularly marked relative to quality of vowel, expression and articulation of words. 17 per cent of the auricular group was rated good in expression as compared with 1 per cent of the orally trained. About 50 per cent rated normal in articulation of words and voicing of vowels as compared with less than 10 per cent in the oral group. It is in these elements that the speech of the deaf children appears most deficient. Dr. Hughson claimed this study to be the first quantitative appraisal of the strides made in the habilitation of the deaf children. It shows, he said, where further progress is needed.

Another study dealing with speech intelligibility of the deaf is that of Hudgins and Numbers[3], who studied 192 deaf pupils from the Pennsylvania School for the Deaf and from the Clarke School. These children were from 8 to 20 years of age. Short, easy sentences read by them were recorded. Errors were counted on the basis of mistakes made in interpretation by the auditors. The auditors, experienced teachers of the deaf, wrote down the sentences on blanks which provided for three reproductions of each sentence.

After the audition, experimenters made transcriptions of the speech materials from the records. From this study emerged these facts: That frequency of articulation errors and errors in rhythm increased with hearing loss. Pupils with some hearing who had been trained with hearing aids made fewer errors than those with the same degree of hearing loss, but no training with an aid. Sentences spoken rhythmically correctly have a 4 to 1 chance of being understood over those spoken with incorrect rhythm. About 21 per cent of the consonants and 12 per cent of the vowels were malarticulated. Rhythm and conso-

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nant articulation were shown to be of greater importance than the vowels. Hudgins and Numbers concluded the study by saying that intelligibility must be the final criterion for judging the speech of the deaf, and that this intelligibility is determined by the frequency of errors in rhythm and articulation.

And here I quote from Dr. Bell's *Mechanism of Speech* to the effect that Dr. Bell, when he first started teaching articulation, was pleased with his pupils' mastery of elementary sounds and their ability to pronounce words and sentences correctly but slowly. Despite the perfect elementary sounds, Bell described himself as "mortified when visitors preferred the imperfect gabble of some semi-mutes to the elocutionary speech I had labored to impart. . . Ordinary people who know nothing of phonetics or elocution have difficulty in understanding slow speech composed of perfect elementary sounds, while they have no difficulty in understanding an imperfect gabble if accent and rhythm are natural."

Miss Mary Numbers said, in an article written for the VOLTA REVIEW as far back as March 1937[4] that "we know that even in schools where there are no aids there is a large percentage of children with a sufficient amount of residual hearing that will show surprising results from the persistent daily use of the binaural tube—provided (1) that the teacher believes in the possibility of educating this hearing, (2) that she has had adequate training in this direction, (3) that she has planned her daily exercises with the idea of the education of the hearing as a whole, rather than sporadic attempts to teach the child to recognize a few isolated words, (4) that she has the patience and the courage to persist in the face of the slow progress which usually accompanies every worthwhile undertaking of such magnitude."

The results of a study conducted at Clarke indicated clearly that the auricularly trained children excelled in speech, voice quality, lipreading, educational achievement, and language development.

Based upon the results of research made by these well known educators of the deaf, and from personal experience over a period of years, these facts stand out:

1. The voice and speech mechanism of the deaf baby is normal.
2. He must be trained through artificial channels to use this mechanism.
3. The deaf child is retarded in use of those language forms which are used spontaneously by the hearing child.
4. Very few children have no residual hearing.
5. Voice quality, inflection and rhythm of speech improve with auricular training.
6. One method of teaching definitely emerges as superior in the light of test results—the auricular method.

Speech Program for a School

1. A coordinated program. A consistency of method throughout a school. Someone to see the job is well done.

2. A committee of teachers working. Group meetings. Must have support of all. Each teacher must be familiar with what child has done. A coordinated effort to make speech good.

3. A periodic intelligibility test. For listeners use judges who do not teach the deaf. Use ears instead of eyes. Test at beginning of year and at end.

4. Recordings to follow development and improvement of speech. These should be made at last once a year.

5. A continuation of speech period in intermediate and upper grades. Never relax vigilance.

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MR. GRACE: I wish to thank this very fine panel, all the individuals who appeared this afternoon. You have been excellent.

The meeting is now recessed.

Reading for Deaf Children

Wednesday Morning, June 23, 1948

FOLLOWING a demonstration of Reading as Developed in the Detroit Day School, Miss Alcorn presented the speaker of the morning, Dr. Gladys Pugh of Central Institute.

MISS ALCORN: No other person has made such a contribution to reading as Gladys Pugh has; she has made an intensive study of reading for the deaf. It gives me a great deal of pleasure to introduce Dr. Gladys Pugh, who will speak to us on "Reading for Deaf Children" Dr. Pugh.

DR. PUGH: The importance of reading seems to be universally recognized, the importance for all children whether they are deaf or possess normal hearing.

Gates has stated that reading is the most important and most troublesome subject in the school curriculum. He has also stated that it is a tool essential to learning all subjects. Wheat has agreed that reading is the most important school subject and that success in other subjects depends upon reading. Betts has gone beyond the traditional idea of reading as a separate subject in the curriculum, and states that reading is a process, not a subject, that it is a social tool to meet social needs. He regards reading as a facet rather than as an isolated fragment of language. He refers to speech, reading and writing as sides or facets of a large area of learning called language.

It is this concept of reading as a process, a tool for learning, or a facet of language that must be given consideration in the attempt to improve the deaf child's skill in the comprehension and use of language.

One fact that should be emphasized emphatically and repeatedly is that there is no conflict between the acquisition of reading skills and acquisition of skill in speech and lipreading. There sometimes appears to be a belief on the part of teachers of the deaf that their pupils will not learn to read the lips if they are given language in the printed form. If we are willing to accept the idea that reading, speech, speechreading, and writing are merely various facets of one large area of learning, we may be less inclined to fear the presentation of materials in the written form lest it hamper the child in his development of lipreading.

Observation strongly demonstrates that exactly the opposite is true. As a child gains skill in reading, in understanding the use of language as a means of conveying thoughts, a decided improvement in both speech and lipreading is almost invariably noted.

Reading is much more fundamentally a basis for language development for the deaf child than for the hearing child, who in the course of normal events learns to understand speech long before he has or needs the ability to read printed matter.

In dealing with any type of handicapped child, it seems only reasonable to believe that he will be stimulated intellectually to a greater degree by presentations that strike least directly at his handicap. Of the various facets of language—reading, speech, writing, spelling, and lipreading—speech and lipreading are the most difficult for the deaf child because they are the facets most closely associated with the handicap. Writing, spelling, and reading should offer no special difficulty because of an auditory defect alone.

Since the child is seriously limited in his ability to acquire perfection in speech, the other facets of language that are less affected by his handicap should be stressed even more than they are with hearing children. We should remember that a deaf child learns to read the lips because he is deaf, and this is his means of substitution for hearing.

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However, he should learn to read, not as a substitute because of his deafness, but because he is an intelligent and reasonable human being who has need of this tool in order to learn innumerable facts, universal truths, and personal beliefs that make up our social thinking.

There is unlimited evidence to show that a deaf child gets much more precise understanding from language that is written than he does from language presented to him through lipreading alone.

There is strong indication of more accurate visualization and more permanent retention of language that is presented in the written form.

These statements are not being presented with any idea of minimizing the importance of lipreading, but rather for the purpose of emphasizing the fact that deaf children like the permanency and exactness of the written form and respond favorably to it. After sentences have been well understood in the written form, they can be discussed very satisfactorily through the use of speech and lipreading, but the written form lays a foundation for the development of thinking and reasoning through the language area. It gives the child strong visual impressions of correct sentence structure.

It is a fact that many deaf children are retarded in reading. It is not a proven fact that they are retarded because they are deaf. One can list 30 or more factors that may be associated with reading disabilities. An auditory defect is merely one of these that may be, but is not necessarily, associated with poor reading.

Some of these factors which are commonly linked with reading disability are low intelligence, nervousness or poor motor coordination, bad personality, visual defects, poor visual memory, narrow span of recognition, ineffective eye movements, inadequate training in phonics, inadequate meaningful vocabulary, lack of interest, guessing rather than reasoning, dislike for reading, inadequate phrasing, failure to vary rate according to the type of material being read, the teacher's disregard for reading readiness, lack of suitable reading materials in the class room, lack of suitable reading materials in the home, neglect of certain skills, overprodding the slow reader, wrong attitude on the part of the teacher or parents, the use of wrong methods of instruction, and insufficient preparation on the part of the teacher.

Most of these factors, you will notice, are factors that can and should be controlled by the teacher. In fact, low intelligence, poor motor coordination, visual defects, and auditory defects are the only ones over which she has little or no control. Even in reference to intelligence, while the teacher cannot change innate ability, she can help the child to develop to the limit of that capacity and by so doing she may cause him to appear to improve intellectually.

A deaf child will not learn to read by having books thrust into his hands and being told to read them. He will not enlarge his vocabulary by being commanded to use a dictionary. He will not learn to enjoy reading by being assigned a seat in the library for an hour every day with no specific help or instruction.

The reading skills are very specific skills. If we would have our children enlarge their vocabularies, we must work definitely toward this end. We must do specific things to aid them and to interest them in taking an active part in building their vocabularies. Individual picture dictionaries should be started for the pupils the day that they enter school.

The value of these should be stressed to the children. A child's vocabulary will not grow rapidly until he begins to put forth effort to make it grow. This emphasis on vocabulary development should be continued through all the grades with frequent teacher-constructed tests to check word mastery at various levels. The pupils must be taught how to use dictionaries, simple ones at first and gradually more difficult ones.

Many periods must be spent on this skill alone, helping the pupils to locate

words quickly and to select the definition that will fit into the sentence that is involved.

If we would have our children understand sentences, we must give specific aid in sentence comprehension by the use of various teacher-made checks and devices that are fully explained in some of the recent publications on reading.

If we would have a child understand the main idea of a selection, we must give him a great amount of practice in doing this specific thing, developing the skill with material of known and appropriate difficulty.

Deaf children can be taught to summarize if this is presented to them in the primary grades and is worked on continuously and persistently. In fact, I believe that a deaf child can learn any and every reading skill that is considered basic for becoming a good reader if we as teachers know specifically how to present that skill and are persistent in giving the children quantities of practice with appropriately selected material.

Entire books have been devoted to the teaching of study-type reading. Every teacher of the deaf should have a great deal of information regarding the specific arts involved in study and how to teach the study skills. The importance of concentration for the child and the preparation of suitable study sheets by the teacher are two of the most essential factors that are involved.

It often seems that deaf children are more interested in factual material and study-type reading than in recreational reading. Many people have seemed to believe that deaf children are limited in their capacity for enjoying narrative material and cannot learn to appreciate the more imaginative ideas.

Several years ago I set up a free reading period for a group of junior high boys and girls, and within a very short time they were reading fictional material with a great deal of enthusiasm.

Last year I started a story hour with a group of primary deaf children. We met in the living room in the evening, so we had a recreational rather than a study-type set up. At first we read the stories together and dramatized them. More and more the children began to select individual books which they could read alone.

I have no objective measurement of what these little girls received. However, I was assured that they loved their story hour, which is evidence that deaf children can become interested in reading for fun. The children laughed at the funny stories until tears came to their eyes, which seems to be proof that deaf children can participate emotionally in narrative-type stories. The children have become very conscious of word meanings and have developed a desire to learn new words. This has been revealed by their participation in word games carried on in situations outside the story hour.

It seems to me that our greatest problem in teaching the deaf child how to read is not his lack of hearing. When we have organized systematic reading programs with definite procedures for teaching specific skills, have recognized reading as merely a facet of language to be taught in relation to rather than apart from speech and speechreading, and have written, revised, and accumulated appropriate reading materials, the deaf child with average or better intelligence will become a good reader in spite of his handicap.

Whenever I have heard the comment, "You can't do this with deaf children," I have sought out a group of deaf children to try it on, and the children have not let me down. Their vocabularies can be increased tremendously; they can learn to understand sentences; they can get the main idea of a selection; they can learn to summarize; they can master the various study skills; and they can become interested in reading just for fun.

When we have more trained teachers who are experts in the field of reading and more suitable materials for classroom and library use, I believe that, given average intelligence, the deaf child will not be re-

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tarded at all in the reading facet of language, and that as progress is made here, improvement will also be noted in the deaf child's speech and his lipreading skill.

Discussion

MISS ALCORN: The idea of this convention was to have a lot of discussion from the floor. Will some people now ask any questions of Dr. Pugh?

MEMBER: I don't know whether Dr. Pugh can answer this question, but I presume that in Central Institute you have a reading test program. Would you care to give the results of your tests as to how the deaf children compare with hearing children, say on the Gates reading test or others, if you use them?

DR. PUGH: I have been in Central Institute only three years. Of course, their testing program has gone on for years.

Since I have been there, I have not been so much concerned with keeping the records of the standardized tests. I have stressed the attitude of the children and what they have gained emotionally, and the factors that you can note through observation of the children.

MEMBER: I would like to know at what age you begin with any type of reading, any recognition of the printed form.

DR. PUGH: It seems to me it is very hard to separate word recognition from reading; that as soon as the child is able to recognize a word in the printed form, he is beginning reading. Of course, the children learn to recognize some words in printed form very soon after they have entered school, even in the nursery school when children are only three or four years old.

MISS TIMBERLAKE: May I ask what tests you use in, say, a fifth grade class, to determine the child's comprehension?

DR. PUGH: Well, the regular achievement tests have been used. Dr. Lane is here, and she know more about the testing program at the school than I do.

MISS TIMBERLAKE: I was wondering, for example, if you could quote a standard test —perhaps Dr. Lane could help us out— showing the achievement of, say, a fifth grade class as checked against the achievement of a fifth grade class in public school, in the matter of reading comprehension.

DR. PUGH: Dr. Lane, can you offer a comment on that?

DR. LANE: We have used the Modern School Achievement Test in the last two or three years at Central Institute rather than the Stanford, and I have not isolated the reading test from the other portions of the test material, but it is a fair measure of the child's achievement. Our Central Institute children are retarded in their general educational development, not as much as the earlier quotations would indicate, perhaps, but on an average of about two to three years, as compared with normal children. I could not isolate the reading as a portion of that, except to say that the reading is the one test that shows the greatest amount of retardation.

DR. PUGH: There is one other comment in regard to the testing through the primary section. I have had more contact with that recently. We have used the tests that accompany the Curriculum Series, and in that are children that are doing second grade reading. Those children are perhaps a year older than the public school children would be.

MEMBER: May I ask Dr. Lane this question: In your experience in the testing for reading, in what phase of the reading do you find the greatest retardation?

DR. LANE: In any measure of getting the meaning, in a paragraph meaning test and also in vocabulary.

MEMBER: Do you think the meaning of a sentence or paragraph shows greater retardation than the vocabulary?

DR. LANE: I would say yes, if it must be entirely given back by the child; no, if he just has to fill in a blank.

DR. PUGH: I can add something on that, too: In my survey I had approximately 2,000 children, and there the retardation was very definitely greatest in word meaning and sentence meaning. The median for those particular skills, for deaf children

who were supposed to be in the upper intermediate or advanced grades, was about 2.5 grade level, which is extremely severe, much lower than the study skill, so I have stressed that with primary children during my work at Central Institute, and our young children have definitely shown that vocabulary and sentence meaning can be worked up.

MR. GRACE: I have a comment concerning reading—it is a question that has bothered me for a good many years. We seem to set up a good reading schedule, seem to be doing very well in reading. Then we jump over into some other field and it does not carry over, or does it? If it does not carry over, why does it not carry over?

DR. PUGH: We often hear the comment, not just for teachers of the deaf, but for all teachers, "Every teacher in the school system should be a teacher of reading." That certainly applies to teachers of the deaf.

I first became interested in reading because I could not teach the children social studies without it. I was a social studies teacher; I found that in self-defense I had to learn how to teach reading, so I took remedial courses for hearing children and I taught them to read social studies and they definitely improved. In one specific study that I conducted a number of years ago, where we used social studies material and the emphasis was on vocabulary, the children improved within a five month period from six months to two years in their reading ability. Most of them jumped in their social studies almost two grades in that period, so one was reinforcing the other, but it was definitely teaching the reading of social studies material.

MR. GRACE: I also happened to teach social studies for two or three years and believe me, I spent most of my time on vocabulary.

I was very much interested in this story that was given this morning. Suppose you let the children read a story, then write a question on the board. Do you find that the child will look around for a word on that page and then answer that question with that word, whether it is right or not? In quite a few schools that seems to be true, and it bothers me a great deal. I don't think we have overcome it.

DR. PUGH: I have not meant to imply that we have overcome the problem at all —the exact thing you mention is one of the greatest problems that we have. But it just seems to me, when we take these special groups and show that it can be done, that it can be done also on the larger scale.

Of course, there has to be a specific attack on the problem. If you phrase your question so that there is not a word in the book that the child can match, you are working for thought rather than for matching; the child will be forced to get the thought or he cannot find the answer to the question. That should be started, of course, when the children are in the primary grades, and not postponed until they get into social studies work.

MISS ALCORN: May I add one word to what Dr. Pugh said? We have found very definitely, in social studies with these children that we have brought up with this thought, that they have very little trouble with social studies in the textbooks. We used to have to stop and explain; these children take it all right.

MEMBER: I think, Dr. Pugh, you have answered the question I have in mind, but I would like to have an answer from the others present. My name is Morrison; I am from Belleville, Ontario. We have had a Royal Commission in Ontario dealing with all education, elementary, high schools, and universities, and the education of the deaf has come under review as well.

The adult deaf brought a prominent, American superintendent to Toronto to present a brief to the Commission. In his attack on oralism, he said that formerly, in a system such as used here in the Detroit Day School, the children were not given the printed word or any written language, but continued with only speech and lipreading for several years. A few schools had

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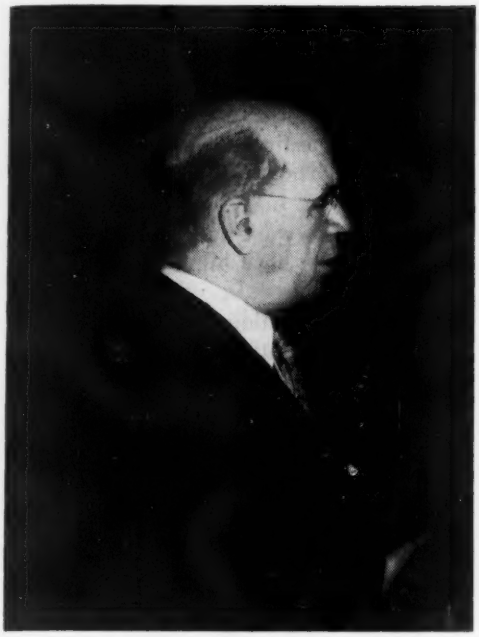


MR. MORRISON ASKS AN IMPORTANT QUESTION

changed, he said, but the great mass of the oral schools were still conducting their education on that basis.

Now, I would like to ask this Association if there is any school today where that is true, where the printed word is not given to children in the first grade, along with speech and lipreading, as Dr. Pugh has urged today should be done.

If my reading of the history of education is correct, I believe that when Miss Rogers and Miss Yale started in Clarke School, they did start with speech and lipreading first, on the assumption that as hearing children begin their education that way at the mother's knee, that seemed to be the right way to start the education of the deaf child.

In my visits to a great many schools since I have become Superintendent of the Belleville School, however, I have never found any place where oralism is used and where teachers are teaching by speech and lipreading, where they do not also start with the printed word, and yet this superintendent tried to leave the impression with our Royal Commission that that was not done.

My question to this audience is, is there any school where writing is not used along with speech and lipreading in the early years? I got the impression from the Panel on Nursery School Education yesterday that even at four, in the Michigan School, for instance, the children were given the printed word so as to get their own names.

MISS ALCORN: Before this superintendent makes such broad statements, he should visit a few schools. I think it is up to the oral schools to come out and repudiate such a statement.

VOICES: We think so too.

MISS JOINER: I was brought up on Miss Yale's formula, speechreading first, the spoken word next, recognition of the printed word later. At first in our preparatory classes we did not show any printed words until they were spoken. Later, however, we decided that the reading was not what it should be, that the comprehension of English in the printed form was not what it should be, so we had one teacher give two hours a day to reading alone, to reading for fun, reading for pleasure. Each teacher in her classroom also taught her lesson in reading. I don't think it can be too strongly stressed.

Announcements followed and the meeting was declared recessed at twelve o'clock noon.

Language for the Deaf

Wednesday Afternoon, June 23, 1948

MR. GRACE, presiding, called the convention to order at 2:40 P.M.

CHAIRMAN GRACE: I believe I said in my opening remarks yesterday that language was the greatest problem we had in teaching the deaf. I noticed Dr. Pugh said the same thing this morning. We do know that language is a great problem. I think it is well that we spend a great deal of time thinking of it and trying to adjust our thinking and our work in such a way that we will do a better job with deaf children.

Without more comment, I am going to ask the various members of the panel to give their discussion. Miss Lillian Keller of the Detroit Day School will speak to you now.

The Detroit Language System

MISS KELLER: Language is a problem for normal children as well as for deaf children, which means that we have to consider the deaf child as having even more special difficulties in language. Because we want to consider a philosophy of education as meeting the needs of children, we in the Detroit Day School feel that a systematic method of teaching language is essential. We use the Croker-Jones-Pratt method as a basis. Lipreading, reading, history, geography and all of the related subjects are all fundamentally language courses, because every time a deaf child expresses himself, he needs good, independent expression. To have a good language program in a school, it is very necessary, first of all, for teachers to seize every opportunity to help develop the ability of children to express themselves.

In considering very briefly the Croker-Jones-Pratt method in language, I want to say that we use the stories in the first grade and the first half of the second grade, which allows a year and one-half for the development of Book I.

Book I consists mostly of developing vocabulary, questions, and answers, which are very important to the little deaf child who is starting in his language development. If you want to converse with a child, you must have him able to ask and answer questions. In other words, our ultimate aim in building up language is to reach the conversational level. While that may be Utopian, at least it is a goal that we can strive for.

In Book II, we find a continuation of questions and answers, plus the beginning development of language principles. That again covers three semesters of work, a year and one-half.

The next step in this language program is Book III, on which we spend approximately two years. That is covered in Grades 4 and 5. Then we use Book IV in the Croker-Jones-Pratt series in the sixth and seventh grades. Sometimes, if a class is very bright, we are able to finish that in a year and a half. Book III contains more development of language principles than Book II; and then in your Book IV, less time is spent on the development of the language drill story, with more time on language principles and some more difficult grammar.

When the deaf children have completed Book IV, they are ready for a regular English book in the seventh, eighth and ninth grades. We have two very good English books that are used in the Detroit school system, and we feel that it is very important that these children have reached a point where, in the seventh grade, they are ready for a regular English book.

Now, often we question methods of teaching language—many people believe this and many people believe that. This particular method has been criticized, and of course, we are always open to criticism when it comes to the development of language with the deaf, but I would like to quote the old proverb and say, "The proof of the pudding is in the eating." The best

evaluation we have had of our particular systematic development of language is the fact that we have had many children—specifically, those who have gone along well academically and are interested in higher education—leave our school in the ninth grade, go to regular high school, and compete with hearing children. And we have had very fine reports from these children.

Just recently we had a report of a youngster who left about a year ago, who because of his very fine English foundation was able to attend summer school this summer and be advanced an extra semester. That is only one case, but we have had splendid reports of children who have gone out from our school.

Sometimes people wonder why the language drill story is used. It is used to develop language and it is used for the enjoyment of the child. The child is interested in stories, and these stories are graded in a very fine manner for gradual development. They offer something for these deaf children to hold to. We find that they enjoy these stories and are always interested in having more, which brings us to the idea of a reading program.

We like to feel that the language program in our school is not pigeon-holed just as language. We try to develop it in an informal way in the very beginning through reading and lipreading, and then a little later, gradually through more formal development.

The language principles, which are always taught in advance of presenting these drill stories, provide something for these deaf children to hold to. Many times if a teacher has these principles that she is teaching upon little charts in her room, when she has assigned some language for self-expression (and that is what we want as the ultimate goal, self-expression from the deaf child as he grows) the child looks on the board, sees these charts with these various principles, and will use them. If he sees them, he will use them; otherwise he might forget them.

Another way that we try to broaden our language program is through taking trips. We arrange many trips on various language levels. In the lower grades the children go to the zoo, or to the circus, if it is possible. Before any of these trips are taken, it is very important to build up vocabulary. That means that the child will have an opportunity to enjoy his trip more, and when he comes back and has a classroom exercise in oral language, he has a better means of expression, he does not have to grope for a certain word that he does not know. He has learned that vocabulary ahead of time.

MR. GRACE: I think Miss Keller indicated something there that we might call attention to and that is, seizing the unexpected opportunity to teach language. I have seen children come to school, very small tots, just bubbling over to tell something; they did not have the language to tell it, but by some crude drawing they were able to tell what had happened.

I remember a little girl who came in one morning and they had had an accident on the way. The street car bumped their car, smashed it up quite badly. She wanted to tell all about this, but of course did not have the means of expression, but she made a pretty good drawing and then the teacher furnished the language.

Our next speaker is Miss Catherine Ford, Belleville, Ontario.

Language Problems in Ontario

MISS FORD: I am one of those teachers from the much criticized seats of learning called the public residential schol for the deaf, that Dr. O'Connor spoke of Monday night, where the teacher has to contend with a class of probably 10 or 12 children with varying I.Q's., and if the pupils of that school happen to be turned out with not very good speech, then the whole fabric of the school comes under criticism. We are said to do nothing, simply because the children don't speak well enough for the general run of people to understand.

I have had quite a number of years of experience, all in a residential school for the deaf. While I feel that I should not be on this platform speaking with so many

experts in the audience, I have had a rather unusual situation to deal with in that we take in untrained teachers, teachers who have to receive their training after they enter the school. And with four, five or six, seven or eight new teachers in one department, who come in knowing nothing about a deaf child or its lack of language, you must have some sort of well organized plan of language that these teachers can get ahead with. They cannot go ahead and teach speech, they must have some time to get a little training; but we must have something to go ahead with, therefore, we must have a well organized plan of language.

I want to speak particularly of the beginning language, the language of the first four or five years, because, of course, that is vitally important. I think I am going to say a word first about what the teacher must learn to do, for the teacher must as quickly as possible realize the child's limitations concerning language, and she must have faith that she is going to be able to teach these deaf children to use language. She must be able to think clearly herself and put the thing she is going to give the children in the simplest possible language, so that the child will not be confused.

What language are we going to give the children? Well, I think most of our courses of study are made up very much the same; we know the words the children are interested in, we know the words they need to have when they come to school and they want to tell us what has happened in the residence, what has happened at play, and when, as Mr. Grace said, they use drawings.

Now, every teacher that comes on the staff, trained or untrained, if she has the right attitude of mind, can do that—she can take these little children and give them the language for the things that they have done. She may have to pretty well turn herself inside out in order to understand what they are trying to tell her, make use of picture dictionaries, make use of drawings, but eventually she can get on the blackboard the things that they have done.

She gives them the language, and that is done day after day and the children understand it because they illustrate it; they have their little drawings, they have the pictures for the words that are not familiar, and by being given that language about those things they do every day often enough, they can make that language their own.

Mind you, I think we must have formal teaching of language. We must always have it in order to be sure the children are getting all the language forms and principles that Miss Keller spoke of—the prepositions, the pronouns, the verbs, the different tenses, the questions—but I think that at first we must do it informally and naturally. By getting the children to tell us what they are doing, and getting that down on the blackboard, and using it so often that they make that language their own, eventually they will put it down for us voluntarily.

I think that is one of the important phases of our language work.

The next important phase, I think, would be materials. We must have repetition of words—children cannot learn a word with two or three or four or ten or 50 repetitions—and we must have interesting and clearcut material that we can use to repeat these language constructions. We need not always do it the same way—it may be picture descriptions, it may be a description of trips that they have taken out of doors, but in some way we must provide the repetition of language that we are giving to the children. And after we have used a principle and after we have given it to them to use, then it must be rubbed in. A lot of this can be done by means of readers.

I am including in the junior years the so-called study type of reading, where we use the Basic primers and any other good primers that we can and make them a foundation for language drill. Then we tell all the stories that children love, and show them here and there as we go along the words in the book; and later they will pick up those books and find those words for themselves and learn a few new words.

Then for reading, not so much the study type, but for pleasure, you can get a number of easy books that can be used in the child's second and third year at school. In these books he can read ahead, finding very few new words that he cannot understand; and by a question now and again through the story, you will be able to find out whether the children are getting the content of what they are reading.

I am a great believer in putting as many books as you can get in the hands of deaf children. I want to say, too, that I think the foundation of all this language is in the speech. We have had proof of that in watching the little children in the class just above the nursery class today. If we are going to get language, we must get children to speak and to have the desire within themselves to use language. If you once get a child to wish to use language, he will learn to speak. He may not speak very well, but he will speak well enough for you and for the rest of the teachers and for his parents to understand him. If we get our language founded in speech and a desire to use speech, I think we can lay a very firm foundation in language for deaf children.

MR. GRACE: Miss Ford, I am sure everyone will agree with me that you were a very fine one to have up here. We have enjoyed and appreciated what you said about language development.

The lady who is chairman of this panel has had a great many years of experience. She has done successful work with the deaf, and knows her field. It gives me a great deal of pleasure to introduce to you now Dr. Rachel Dawes Davies, of Western Reserve University.

DR. DAVIES: Miss Ford has wisely emphasized the need of interesting language-teaching materials. Some years ago I heard Sister Anna Rose of St. Joseph's Institute in St. Louis give a description of some material that she and her co-workers had developed to make the learning of language truly painless. It was very delightful illustrative material, and later I was fortunate enough to see some of it in the classroom and observe the results of its use. I have asked Sister Anna Rose to tell us today about some of that illustrative material to make language painless. Sister Anna Rose.

Visual Teaching Materials

SISTER ANNA ROSE: When Mrs. Davies asked me to show visual aids, I really didn't have very many on hand—we had cleaned up all of our classrooms and as you know, you never use the same thing twice. However, I have brought some flash cards and a little of the material that I have used this year.

I have been teaching a fifth grade class and I will tell you about a little exercise that we use—an exercise on verbs that naturally suggest certain nouns.

Mrs. Davies said she wanted oral language, so I think she wants me to tell you how we get the children to give back verbally any kind of drill work, and I will show you a few of these. (Sister Anna Rose held up a series of flash cards, each with a verb printed on it.)

When I flashed "chirped," they would say "bird." "Clattered" — the dishes. "Melted" — the snow or the butter. "Stalled" — the car. "Twinkled" — stars. "Grunted"—if anybody cannot figure that out! "Dawned" . . . I brought a great many along. If anybody wants to see the rest of the material, I will leave it here.

Then we use this drill. To make sure the children understood the meaning of the word, I would flash a word like "complained"—then I would demand that the children give me a sentence. The sentence would be something like this, "Oh, Sister, you give us too much homework!" "Refused"—then they would give a sentence like "No, I don't care for any," or "No, you may not,"—just so they would prove they understood the meaning of the word.

"Greeted"—"Good afternoon." "Begged" —"Please don't give us any home work!"

This is some of the work we do with adjectives. I would flash "gay" and maybe I would say, "Give me a synonym." "Happy." Maybe I would say, "Make this mod-

SISTER ANNA ROSE

ify a noun,"—"A gay child," or "A gay time." Then maybe I would say "Change it to a noun,"—and they would have to say "gaiety." Then I might say, "Change it to an adverb"—"gaily."

When you have a great many adjectives like this, you can begin to teach prefixes and suffixes; you can show that to make an adjective a noun, you leave off the suffix. (Showing cards with the adjectives "joyful," "wealthy.") You have joy, wealth.

Sometimes when you are using adjectives, to relieve the monotony you can teach proper adjectives. Point to a place on the map. Point to Canada, and they say, "Canadian." Point to Alaska, "Alaskan,"—just quick drill.

We all know how much difficulty we have with the word "go"—you go home, go outside, go fishing, go swimming, but you go *to* the show, go *to* the park, and we all know that these things just have to be drilled in. I made cards and they just played with them,—go home, go to chapel, go swimming, go to the circus. And then use your map again,—go to Alaska, go to Canada, go to Cleveland, but "go to *the* Philippines Islands," go to *the* Gulf of Mexico,"—they just have to learn it.

Now, sometimes we would use lists of words that give the idea of "bad,"—rotten, decayed, spoiled, withered. Maybe I would say, "Apple,"—they would have to find the right word; or "Accident,"—they would have to say "Horrible." Maybe I would say "Bread"—they have to say "stale bread." At other times we give them the adjective, and they have to give the correct noun.

This is some of the material that I had around the blackboard the last week of school, with pictures. For example, there was a picture of a house—well cared for, stately, lovely, fine, comfortable, roomy, grand.

Here is some visual material that correlates the contractions and also uses adjectives—that's absurd—that's foolish—that's ridiculous. You can find so many good pictures to illustrate things like that. You all do it, of course.

Then we can find so many pictures that will illustrate common expressions. "Alice is down in the mouth because she didn't win,"—and she really looks down in the mouth! "These sisters don't get along,"—you would have to talk a great deal to explain what "getting along" meant, but if you have cards and pictures that describe it, you are better off. "He is afraid that he will get the reputation of being a sissy,"—reputation, what people think of you, not what you are.

I have some work here with verbs—the children found this very interesting—we had a great many and sometimes we would just stay on one for a whole period. The teacher would give the adjective and the children supply the correct verb, or vice versa. (Holding up picture of a policeman.) You might say, "The burly policeman frightened the children," "The kind policeman talked to the children," "The clever policeman caught the boy." Then (showing picture of boy and lawn mower) we might have sentences like this, "Mother wanted John to cut the grass." I would ask the children to give me a sentence mother would have used, for example, "You'd better get out and cut that grass right now, or you know what will happen to you." Or

mother coaxed John to cut the grass—"Be a good boy, go on out and cut the grass."

And this shopper—"The tired shopper flopped into a chair," or "The tired shopper kicked off her shoes,"—you will think of a lot of ways to finish off that "tired shopper."

I think that is enough, don't you?

(EDITOR'S NOTE: Much of Sister Anna Rose's delightful material does not lend itself to description. Teachers crowded around to see it at the close of the session.)

MRS. DAVIES: Would you like to ask Sister Anna Rose questions now or later? I hope you will have questions for all of us.

Silent Reading But Oral English

MRS. DAVIES: This morning we had a discussion of reading and two points seemed to me not brought out. Of course, you know with what restraint I stayed down, knowing I was going to be up this afternoon, so now is my chance at those two points. The question of age did not come up—and to my way of thinking, the age of the child in the consideration of the language and reading program is of all importance. How old is this beginning child we are talking about, when we decide whether we are going to use speech alone, or allow reading to go right along with our beginning work? Another point that didn't seem to come up was the necessity and desirability of experiences, as one of the criterions of reading readiness. We should consider the kind and amount of experience the child has had or that we need to provide before he has the background to start a language program or reading program. I would like to start from there, because this whole program, as has been pointed out, is not just language, it is language arts—combined reading, language and speech.

In these days of such large numbers of nursery school children, a three-year-old and a four-year-old and a five-year-old are starting school—so-called "school," of course, certainly before the age of reading. It seems to me there is no question about any reading in those years.

It is believed by the best authorities that three or four or five is too young to start reading for the hearing child. And we are teaching children.

Can we not say that we will do nothing with the deaf child, nothing for him and nothing to him, that is not done for and with and to the hearing child? Why do we have to do anything different just because he is a deaf child? We just pile up trouble for ourselves when we do.

If, in this nursery school program, we do give a program of recognizing the printed word, we find that it can be done—the little child can learn to recognize the word "ball" just as he can learn to recognize the picture "ball." That has been proven before, but if he is going to spend three or four years just recognizing words, a habit will be fixed. We have made him a word reader—and believe me, I know whereof I speak!

In the Stanford test, the primary achievement test, the first exercise for the first and second grade children says, "My name is Pussy. I say 'mew-mew.' I catch mice. I am a ——." And what do the little children write? The little boys write "boy" and the little girls write "girl." They are not reading the related material, they are not reading the connected language, you see, and we have reaped what we sow in too long a time on the isolated work. Two years of a recognition reading program which serves to keep the children busy, and we have word readers for life.

Now, in the nursery school program, here is our opportunity to get speech habits started in an informal way. It is below the stage of reading, below the period of writing; therefore all of the speech will have to be merely imitation, developed through what they can see—touch—feel—that's all; we have to accept the approximations just as we do with hearing children—that is Level I in speech and it is Level I in language, all given on the spot, on the occasion, helping the child to speak as well as he can, learn to lipread, at least find out that lipreading is a means of conforming—very, very valuable habits.

A wonderful program of stabilizing emotions and socialization is the most important part of the nursery school program, and we postpone the reading until the child is of the age to go ahead quickly. We need no more than about 60 words in a basic reading vocabulary, apart from the names of the children, to combine phrases and sentences and little experiences, using this vocabulary, reading phrases and sentences. For that program, however, the child will have to be at least six and one-half, mental age.

Of course, maybe that child is seven or eight years of age, maybe he is a little younger. I have no wish to push the reading program; I think we gain speed by going slowly through those years and building up all the language habits we can for speech and lip reading.

Now we come to the second level, the level when the child is reading and we can present some of the written symbols, represent his sounds in writing. What is our program then? Do we wish to have him read out loud from the book, read out loud from the slate?

Often for training classes, I write up a word, "abracadabra," and I ask somebody, "What did I write?" Someone will pronounce it, "abracadabra," and then I say, "What does it mean?"

Well, if I am lucky and get somebody who doesn't know, he may say, "I don't know." Then I say, "What did that individual do—did he or did he not read the word, 'abracadabra'?"

Psychologically, if he didn't know what it means, he didn't read it—he pronounced it. A hearing child has an advantage in pronouncing new words—he hears himself say words that he has heard in other situations, and that augments his recognition and speeds him up in the reading program.

The deaf child? No. The deaf child pronounces the words, but he does not hear himself say them; he gets no benefit from them; he is slowed up in his reading because he is having to say it out loud. I cannot see where oral reading has any place at all for the deaf child.

Speech: Articulation or Spoken Thoughts?

Now we come to another phase of speech and language work. In speech and language, what do we want to practice? Do we want the child to practice recitation of what we have written or what some author has written, or do we want him to practice his speech, giving out his own ideas?

These are two different things, and the longer I live the more sure I am that they don't overlap and they do not help one another; at least I mean the former does not help the latter. The recitation of someone else's thoughts may result in beautiful articulation. I heard a deaf child say one day, beautifully, "I shot an arrow into the air; it fell to earth I know not where. . . ."

I cornered that deaf boy a little later. I said, "What is an arrow?" I wrote the word, I said, "What is it?" He didn't know, but he had given a beautiful rendition of the poem.

I don't see that we have time for that kind of speech in our program. It pleases us, but it has not helped him. That is why I called my topic today, "Silent Reading but Oral English"—that is, oral English that is all his own, or English we are helping him to use because he has a need for using it on his own, not reading off and practicing what someone else has said.

We have guides, very fine material. The modern readers give us materials or ideas for experiences that can be the content of our language program. One project that my normal students always do is to comb a series of primers, first readers and second readers, such as Scott Foresman, Silver Burdett, and Row Peterson, for experiences that are there. We list those, we plan those actual experiences and build our language, and the child learns to use the language regarding those experiences which are his own. We provide them, we make them his own, they are his.

Then later, in his reading program, he meets those experiences and he is delighted, as is intended by those clever authors who intended that he should be delighted. The early readers are merely to help the

child read about experiences that he himself has had. All of his reading through the first three years merely recalls similar experiences, produces mental pictures. Toward the end of the third grade, and into the fourth, he begins to read to learn, and there he must construct mental pictures of things he has not yet experienced.

That is the program for the hearing child. Why can it not be the same for the deaf child?

I have done many interesting tabulations and studies just for my own curiosity. We have so many fetishes in work with the deaf. Did you or did you not ever hear of the insistence on using the article with the noun? (Don't tell me you have not!) You must not teach ball—it must be "a ball"; not apple—it must be "an apple." You must not teach "water"—it is "some water."

Well, I have tabulated and have had students tabulate to check my tabulations—the use of those nouns in primers, first and second readers, where the nouns occurred with the appropriate article and where they occurred with an intervening word which changes things considerably—"an apple," but not "an yellow apple," and not "yellow an apple." You have seen it—don't tell me you have not—"I bought red a ball"—"I lost my a ball."

Well, the frequency of the use of the noun with the article and not an intervening word is very low, very low indeed. It has been checked over and over again. In the readers which are based on children's experiences the use of the noun with an intervening word or with a pronoun other than the article, greatly exceeds the use of the noun with the article.

Were you ever in your life told to fall? Were you ever in your life told to cry? Nobody ever was but a deaf child! Can we ourselves believe that we are teaching verbs from these commands? Let me tell you what happened to me in New Jersey. I had a picture of myself on a horse, going over a fence. I was very proud to show that picture—I mentioned that the horse jumped over the fence.

"No!" said a little boy and he jumped (demonstrating). He had a mental picture of the horse putting up his fore feet and jumping over on his hind feet, because to him this was "jump" and that was all there was to "jump."

Later something came up about the rabbit and the bird hopping. "No, no!" The bird hopped with two feet and the rabbit hopped with four feet and that could not be hopping because he had learned this was hopping (demonstrating).

Miss Ford, in a recent article in the *Journal of Exceptional Children*, said, "We must do better." I want to supplement that and say, yes, we must and can do better. We don't need to be limited by these meager vocabularies. We realize these fetishes can go into a bonfire, and these limitations of vocabulary need not restrain us at all.

We Must Teach Better

How can we do better with these verbs? Well, commands have nothing to do with it. First of all, with our little children, we can select from our collection of pictures ten different words, having anywhere from seven to ten different situations for each word. Take the word "wash." Have a picture of a little girl washing dishes, a man washing his car, Mother washing her hair, washing clothes in a washing machine—there are many uses of "wash."

"Feeding" is a very interesting one—scattering the corn for the chickens, giving the bottle to the baby or feeding the baby in the time-honored method, feeding the cat, giving an ear of corn to the horse, leaves and carrots to the rabbit, scattering the fish food over the fish bowl—all different ways of feeding. We have "carried"—all the ways of carrying, in your arms, in a pail, in a basket; "running" on four legs, on two legs; "jumping" on four legs, two legs. Those pictures are all shuffled and then the teacher puts one of each up on the crayon ledge and they start to match. There's a picture of a boy washing his dog. Up comes this one of mother washing her hair; the teacher looks them over, places this on top of the one washing the

dog and then soon the children are taking her place, matching the pictures according to situations. They prove that they see something in common in all of those pictures. The common element is the verb. When that can be done, the children are ready for the word.

Using this plan, how many words can you teach? How many new words must we teach in a day on the average to prepare our children for high school work? That has been tabulated. We must teach on the average of five new words a day from the beginning of first grade work at six and one-half years of age; from then on, five new words a day.

How many contacts are needed for mastery? Candy, ice cream, cooky—one contact. Airplane—one contact. Some words require more. I like to say, roughly, 60. Gates has said 20 to 30 contacts with the hearing child, so I just tripled his maximum. And when someone says to me, "He should know that word—I have taught that word," I just say "60 contacts," and then we all get busy.

We have to select a form to start with. It has seemed to me through the years that the past declarative has been the one most needed, and so I generally introduce these words: *washed, carried, fed, walked, hopped, jumped, flew.* Immediately they are placed in a reference situation where another form, the root form, written in a different color, is matched. (I call it the root form; some call it the present, but I like the word "root" because that connotes to me, "with many situations.") Immediately "buy" is matched with "bought," "hop" with "hopped," "fall" with "fell," and when the child says, "I did not fell," or "I will went," he gradually learns that we refer him to a certain color and that is the one he uses with that form. That is the crutch helping him and arranging so that he meets only one problem at a time.

For practice, you will want a minimum of 35,000 flash cards and perhaps a maximum of 50,000, and that is not exaggerated. This material should all come back orally. I would love to see a great big bonfire of pencils, especially red and blue ones, but I would like to see a lot of black ones in there, too.

Again, let's come back to the hearing child. We should not ask our deaf child to do any more writing than we ask the hearing child to do—not one minute's more. His language is going to be used in speech; very seldom is he going to write unless he is not understood. That is another problem (and we will leave it to the speech panel) but the practice of learning and habit forming should be in speech.

Language That Must be Taught

Have we a list of the language we must teach? We have Stone's word list, before that we had Gates' word list and before that we had Thorndike's word list, but I am now using Rinsland. I brought it with me, I thought you would like to see it—many of you have, I know. This is an Oklahoma study—the book costs $6.00. I am using the first and second grade vocabulary. These are words hearing children actually used, and it is amazing, the difference between this list and the amount that we usually get in a reading list. We must not stop with a reading list, we must have more. We are not teaching enough when we just teach words in Stone's reading list in the fourth grade, or Gates' in the third. I recommend a study of this to your attention. It is "Basic Vocabulary of Elementary School Children," published by Macmillan.

Of course, these were different children —thousands and thousands of them. No one child used all the words in the grade. But all the first graders, in their writing, used 5,099 different words, and the second graders used 5,821 different words other than those. There was quite a jump in third grade, 3,000 more. Not every child used all the words, but there is a list for us to choose from, and not all our children will use all the same words, either.

I believe we teachers of the deaf as a whole have not been paying enough attention to studies and material prepared for educational purposes. We are, I hope,

educators, too, and it seems to me we should be studying and we should be using the same materials and marvelous studies that are coming out all the time for hearing children.

I brought another book—it happens to be my latest enthusiasm. It is by a Britisher, A. F. Watts, published by George B. Harrap Company, London, called "The Language and Mental Development of Children," published in '44. If you have not seen it, I recommend it to you. It is distributed in this country by D. C. Heath & Co., New York.

Many things there, being written by a Britisher for a different environment, will not fit our needs, but it is a very interesting study from the standpoint of development through language, and we can get much help from it.

Too many of us are perfectionists. I don't think we will be perfectionists after we have read this book, showing the slow development of the use of language. I really believe every teacher would get a great deal of help out of this book. The author shows the period of confusion in the use of language of the hearing child and how we all pass through that period of confusion, into acceptable usage, through trial and error and unfavorable environment, until we have formed the habits that are ours. The deaf child must be allowed and must be helped to formulate habits. When we let him practice what we have set before him, standing up there, tense and tight, and giving a speech production of something that is painful to him and to us, he is not forming language habits. It's not fun enough to stir the blood and have it repeated and enjoyed—it just is not working. Many of the things we require of him bring into play too many things to do at one time.

We as teachers do not use our language by analysis; our own use of language is the result of habits we have formed, and the child must be allowed to use his language in that same way, form his habits, make habitual what is desirable, learning from life situations, and one problem at a time.

MISS ESTHER HOWES

Remember what Miss Ford said in that article: We must do better. I say we can.

Now may we have some questions?

Discussion

CHAIRMAN GRACE: I would like to ask Mrs. Davies one question. That is, does she have an assistant for each teacher to prepare all of this material?

MRS. DAVIES: That is a good question. The material of course would have to be gradually accumulated and the job should be divided up among teachers so that no one teacher has the whole burden.

We cannot teach language, however, in a vacuum—it cannot be done. The deaf child needs visual aids. If everyone will get together and divide the work up, it can be done.

Early Reading Helps in High School

MISS ESTHER HOWES: I would like to say "amen" to everything Mrs. Davies said but one, but may I make that "but." I don't feel that it would be true to my experience to let the remarks about teaching any form of reading before the age of six pass without my protest.

Many years ago, in the Chicago schools, we began teaching reading in the kinder-

garten to children four, five, six years of age. We didn't teach just strings of words; we immediately put those words in sentences and in whole charts, experience charts, so that even the little four year olds could have a chart of their birthday party, have a chart of Hallowe'en. Say we made a jack o'lantern. Mary cut it out, George cut the nose, I cut the eyes; then we could turn that around, have some other child say, "Elsie cut the eyes," etc.

Now, in my high school work, I am getting the children to whom we taught that early printed form of words, and I find those children ready to go into high school English, where other children who were not taught early have never made up that gap between the early and the late presentation of language in print.

MRS. DAVIES: I think we disagree in our definition of reading. I call that so-called reading, but I think you would find that while they recognized certain words from their own experience, it is limited to that; they would not know "cut" as used in "cut the lawn" and "the barber cut the boy's hair."

MISS HOWES: We didn't try to put that over. I would like to quote as my authority, Dr. Frank Freeman: "If they can do that type of reading and enjoy doing it, they are ready for it."

It is a question of presenting language to children who cannot get it in the ordinary way.

MRS. DAVIES: I am fearful of the silent deaf child.

MR. MORRISON: What about the amount of grammar through the eighth grade?

MRS. DAVIES: Just the amount that you give in a good school for hearing children. Of course, they use the terms, noun, verb, pronoun, and they learn them not from definition but by use and definition, exactly as in a school for hearing children.

You asked a question this morning on testing, what aspect of testing the reading program was most difficult. I have found that the aspect that is giving us most trouble in the lower grades is that where a child is asked to anticipate what happens next. He needs to be helped over that hurdle—to read what is printed and imagine what happens next—but so does the hearing child need help on that.

MR. GRACE: I think this has been a very fine discussion.

It seems to me, as I listen to these discussions and think in terms of our work, that the job of teaching the deaf grows greater and greater, but someone made a statement that at least gives us some hope and consolation: "We are developing as we go along. Not all of these things that come up are problems; they are simply growing pains."

We are scheduled to adjourn at four o'clock, and it is now four o'clock.

The meeting then recessed.

What the Medical Profession is Doing to Help the Deaf Child

Wednesday Evening, June 23, 1948

HALFWAY through the Summer Meeting, the members of the Association had the pleasure of listening to a lecture by Dr. Bruce Proctor, of Detroit, who spoke of the encouragement offered recently in the field of deafness by the medical profession. Much of the clarity of the lecture depended upon the splendid lantern slides and motion pictures which accompanied it, so that it is impossible to do it justice in print, but it was greatly enjoyed, and the speaker was kept busy for some time responding to questions from the audience.

Dr. Proctor, graciously responding to a request, has provided the following résumé of his discussion:

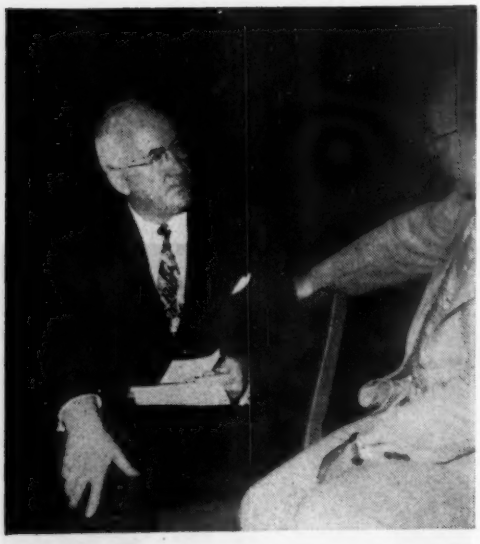
In the last decade, two significant advances have been made in the treatment of deafness. One is the treatment of conduction deafness due to hyperplastic lymphoid tissue in the nasopharynx with radium or radon. The other is the fenestration operation for otosclerosis.

During infancy and childhood enlarged and inflamed adenoid tissue in the nasopharynx may occlude the eustachian tube and produce a catarrhal inflammation in the middle ear which produces a conduction deafness. Every child, and adult as well, with this type of deafness should have a thorough examination of the nasopharynx with the various techniques now available to ascertain the presence or absence of diseased adenoid tissue. Many of these cases have had an adenoidectomy but proper examination may reveal recurrent or residual adenoids. In such an event a secondary adenoidectomy may be required. If this is not followed by restoration of hearing to normal, a course of radium or radon treatment to the nasopharynx is advisable.

DR. BRUCE PROCTOR

The radium is applied to the nasopharynx by means of an applicator inserted through the nostril. The applicator usually contains 50 mgs. of radium. It is applied to the lateral wall of the nasopharynx in the region of the eustachian tube orifice for approximately twelve minutes to each side. Customarily five treatments at two week intervals are given. Audiometric examinations are done before and after a course of treatment.

The technic of this treatment was illus-



PRESIDENT O'CONNOR LISTENS TO DR. PROCTOR BETWEEN THE TWO MOTION PICTURES

trated with lantern slides and a moving picture made by Dr. E. P. Fowler, Jr., of New York.

The fenestration operation has offered new hope of restoration of useful hearing to individuals afflicted with otosclerosis. The anatomy of the ear, the pathology of otosclerosis and the technic of surgery was illustrated by lantern slides.

A moving picture produced by the Otology department of the University of Chicago was shown, which illustrated the meticulous surgery required in this operation.

Presentation of Life Membership

At this session, Mr. Louis M. Balfour, a young deaf man who is much interested in the work of the Volta Bureau and comes often to its library to read, presented his little daughter, Josephine Caroline Balfour, with a life membership in the Association. Mr. Balfour stated that he wished in this way to express his appreciation for the encouragement given him in efforts to improve his own speech and lipreading, and to honor Miss Josephine Timberlake, Executive Secretary of the organization, on her birthday.

Dr. O'Connor received the life membership with appreciation, welcomed the new member, and called Miss Timberlake to the rostrum to pin the life membership badge on the little girl's shoulder. Returning to her seat, the Executive Secretary, discomfited by the unexpected spotlight, provided a laugh for the audience by failing to find the row in which she had been sitting, as the strains of "Happy Birthday to You" suddenly burst forth from a male sextet in the back of the room.

THE NEW LIFE MEMBER

Thanks are due Mr. Balfour for the photographs which add so much to the interest of this Proceedings Number.

Lipreading in Present Day Education

Thursday, June 24, 1948

THE session on Lipreading was called to order at 10 A.M. by Mr. W. J. Morrison, Superintendent of the Ontario School for the Deaf.

MR. MORRISON: Ladies and Gentlemen, in presiding over this discussion of lipreading, I am going to say very little. Miss Mary Numbers, of the Clarke School, and a panel whom she has selected, will speak to you. I would like to say, however, that our own school owes much to Clarke School. Miss Ford, who was on the platform yesterday, received most of her training there, and I believe has known Miss Numbers for many years. I am sure there are few, if any, better fitted to speak on the subject of lipreading than Miss Numbers.

I regret that Grace Harris Lassman is not here, because as Miss Harris she started on our staff and received her early training under Miss Ford. I had a letter from her, saying she could not be here because the Tracy Clinic was carrying on a summer school. I believe that a Clarke School teacher is going to read the paper prepared by Mrs. Lassman. She will be introduced by Miss Numbers.

MISS NUMBERS: We greatly regret Mrs. Lassman's inability to be with us. Her paper will be read by Miss Margaret Kennedy, of the Clarke School. Miss Kennedy.

Lipreading in Nursery School

By GRACE HARRIS LASSMAN

This paper includes the general approach to the young deaf child as regards lipreading, a general outline of what the child at the three age-levels (3, 4, and 5 years) has accomplished in the lipreading area, and a brief summary of the lipreading accomplishments of a child who has had three years of Nursery School training, who would be considered average among the group; and included in this summary, a few significant factors drawn from the case history of the child. The philosophy and ideas presented are those incorporated in the program of John Tracy Clinic Nursery School.

John Tracy Clinic functions on the premise that everything the child does, how well he does it, his attitudes, his ability to cooperate, his desire to understand, to relate, to apply and interpret, are all reflections of the total personality of the child. On the basis of this conviction, the Nursery School aims at reaching the child through the parent and with the parent—the most important teacher in the child's life, for good or otherwise. And of all educational procedures which the parent is capable of managing most efficiently, the first in order is the understanding of language through lipreading.

The teacher's task is one of guiding the parent, not only in direct lipreading procedures, but in demonstrating the need of approaching each child as an individual. The parents are required to carry over, into other situations, the lipreading techniques and ideas presented in Nursery School. They are shown how a particular idea may be applied casually and effectively in different ways to suit a particular occasion. This helps in eliminating the idea that the home has to be turned into a schoolroom in the technical sense, or that the picnic in the park must have all the joy taken out of it by transforming every incident into a formal event for the sake of lipreading.

Parents and teachers, at the Clinic, have proved to themselves that tension, formality, compulsion, exploitation of the child in the attempt to demonstrate teaching ability, are fatal to the development of lipreading in the very young child. Lipreading should be a broad and applicable skill, not a narrow one confined to one situation where the child feels he must conform. They have found that the child learns to

lipread most readily in the environment where he feels most secure and relaxed—and he should find that in his own home with his family.

The Nursery School promotes permissiveness to the greatest possible degree. For example, if a child prefers to participate in a lipreading lesson while sitting in the sandbox, there is no valid reason why he must go indoors and sit on a chair. Teachers and parents, when they feel secure enough within themselves to admit it, have found that the little child is frequently wiser than they. By studying the individual child and being guided by his interests, we have discovered that those interests can be directed into channels of learning, and that adult acceptance of the child inevitably leads to the child's acceptance of the adult and the adult's suggestions. Teachers have been able to prove this to parents by actually doing it.

The above factors have been mentioned since they are considered, at the Clinic, to be the basis of understanding through lipreading. The little deaf child should not be expected to conform to rigid standards and be exposed to adult pressure. We feel that we have proven to all those who have spent three years at the Clinic, that the child who feels free and unrestricted in mind and body will exhibit a more spontaneous desire to understand the spoken language of society through lipreading, and do it well.

When the child enters Nursery School, every adult is required to talk to him in any situation that would naturally call for speech. Even when the child couldn't possibly understand every word in the explanation, the speech goes on anyway, and is tied up with real objects, people or situations. This technique continues throughout the three-year period in Nursery School, and is carried over, by the parent, into every other experience of the child. This idea, applied at an early age, can be casual, easy, natural, and enjoyable.

The little deaf child has been found to appreciate a complete phrase, sentence or expression just as fully as an isolated word. Every word within the child's sphere of contact should be presented in the many different sentences and phrases that various experiences will permit. It was found at the Clinic that if teacher and parent abided by this theory the child gradually but definitely established a well-rounded concept of each word.

Casual and enthusiastic talks between parent and child, between teacher and child, provide one of the first opportunities to tie up home and school activities. As the child is exposed to the language describing incidents which occurred *yesterday, at home, down town,* etc., he is also taking his first steps towards an understanding of abstract factors such as time and distance—difficult learning problems for many an unprepared deaf child during later years.

Considering the broad understanding of spoken language which the children here have exhibited, it would appear that general lipreading through real experiences would be among the most effective preventives of language problems which might present themselves at a later date.

The following is a brief example of language understanding through lipreading, demonstrated by a severely deaf five-year-old child, who was in her third year of attendance in the Nursery School. One day, she came in to see one of the office staff, who liked to talk to the children and to put them through an occasional test. She said, "Marie, I left my purse upstairs. Will you go and get it for me?" No sign, gesture, or clue was given the child. However, she went off immediately and came back with the purse. This is the type of understanding we would like to see every young child acquire; the younger the better, so long as no force or pressure is placed upon the child.

Paralleling the general lipreading experiences, specific lipreading is introduced and carried on as a means of building a lipreading vocabulary. Many times, we are asked about required lipreading lists for the different age levels. We have no required list. The source of the lipreading vocabulary is always the child and his

individual interests. The children, without exception, have lipread most easily those words which involve a special interest.

For instance, if, after watching the child in play, and through conferences with the mother, we find that he has a keen interest in cars and balls, and that he has been exposed to many experiences involving the use of those words, they would be chosen as likely material for specific lipreading. The objects, real and pictured, would be used in various ways in Nursery School and at home for lipreading practice—hiding, finding, pushing, bringing, giving, etc. Conversation would revolve about each activity. One day, the child's responses indicate that he can lipread those words whenever they arise. Once the first words are well established, and prove to be useful and meaningful to the child, each additional word is mastered with increasing ease.

During the first year in Nursery School, much of the lipreading of the three-year-old is correlated with sense training activities. As the child learns to match colors, numbers, objects, and pictures, he also learns to watch the teacher or parent as each is described. Eventually he is able to match the lip movements of the speaking adult to the corresponding object.

He learns to lipread action verbs, such as fall, jump, and run, provided the activities are real and interesting. The parents have the responsibility of fixing these words in other situations. At the end of the first year of training, the child usually lipreads several isolated action verbs, and very simple sentences such as, "The boy fell."

In the second year of training, at the four-year-old level, he lipreads the words of the first year much more readily, recognizes them in phrases and sentences, and in many cases, is able to answer questions concerning them.

At the end of his second year, he lipreads a larger number of verbs, isolated and in simple sentences; as well as being able to lipread a question demanding an answer involving those verbs. For example: "What did ..... do?" "..... ran."

During the third year in Nursery School, almost every five-year-old has become very confident of his ability to lipread all that has gone before. In addition, he can understand a considerably larger number of words and more complicated descriptions. He continues to expand the number of words in his lipreading vocabulary and to ask, as well as answer, questions. For example, the five-year-olds have asked, "Who's crying?" and other such questions including verbs in their vocabulary.

Preparation for questions and answers can be commenced early in Nursery School work. For some time, teacher and parent do both the asking and the answering. This idea has been used casually, and has been entirely lacking in demands upon the child, except for watching. After they do notice the particular lip movements, the children often have the tendency to repeat the question, rather than give the answer. If we think for a moment, we may remember that little hearing children do likewise when they are learning to talk. Gradually these things pass, and one day, the child answers spontaneously. This takes place, generally, towards the end of the second year of training. During the third year, the child answers most questions, and asks several. For example, one of the five-year-olds went to the teacher one afternoon and asked, "What time is it?" Her mother, who was observing that day and heard the remark, said she hadn't heard the child ask the question before. Apparently, she had been observing and watching over a period of time, and had connected the particular lip movements with a clock or a watch, and going home.

The three-year-old is capable of lipreading a few colors during the first year of training. The same colors are not lipread by all the children. It has been interesting to note that the word most easily recognized on the lips is not always the one which the child appears to lipread most readily. It appears to be closely related to his appreciation of colors in general, and to his favorite colors. Some three-year-olds have also been able to lipread a few phrases including a color.

The four-year-old, during the second year of training, usually lipreads all the basic colors in isolated form, and is much more adept at lipreading color phrases.

The five-year-old, after three years of training, has been found capable of lipreading all the colors, isolated, in phrases, and in sentences. He is also able to lipread the question form, "What color .....?" give the correct answer, and usually ask the question.

The three-year-old learns to count to three, and to lipread the isolated numbers to three. The four-year-old has been found to count to four, to lipread any number to four, and phrases and sentences including numbers to four. The five-year-old counts to five, at least, lipreads numbers to five, phrases and sentences including numbers to five, and is capable of answering and asking the question, "How many .....?"

Verbs, adjectives, adverbs and prepositions are all built up from the first through (1) real experiences and conversations with as many people as possible, and in interesting situations; (2) specific situations where each word is given special attention at Nursery School and at home.

Charts, pictures, scrapbooks, story and picture books are incorporated into the child's program as much as the principles of healthy development will permit. Lipreading is correlated with auditory training and speech responses, whenever possible and plausible. At least part of the lipreading practice, every day, is carried on while the child is wearing earphones. The parents, through experience, are convinced of the value of auditory training in promoting better lipreading.

Parents and teachers who have been active in the Clinic's program have come to believe that if more time were spent in thinking of the child as an individual, caring for his needs, giving him experiences and the corresponding verbal explanations, the understanding of language through lipreading would develop more rapidly; and the lipreading ability, in turn, would accelerate the speech development. Lipreading has been found to be much slower in some cases than in others; but generally, the differences have been considered normal rather than abnormal. Deaf children, in all probability, would have an easier time of it if their teachers and parents had a broader understanding of young hearing children, their needs, their development, how they react at different age-levels, and what they are capable of understanding.

Summary of the Lipreading Accomplishments of a Young Deaf Child Over a Three Year Period

Jackie entered Nursery School at the age of 2 years, 11 months. His mother enrolled with him, agreeing to attend the Clinic two days a week. Jackie had had seven instalments of the Correspondence Course, and at the time of entrance was able to match colors, shapes, and sizes, and could do the exercises in the Course reasonably well, in relation to his age. He babbled freely, although he had no intelligible speech. His lipreading vocabulary consisted of several words and expressions to which he had been exposed frequently at home. Jackie was considered to have one of the best preparations for future development — that of having learned to watch, to cooperate, and to be relaxed.

Jackie's progress throughout the three years in Nursery School was considered average. He did not have the largest lipreading vocabulary, nor the largest speaking vocabulary, nor did he display any startling talent. However, it was felt that Jackie would always go forward, never regress. His development was steady.

His healthy curiosity, which was never suppressed, proved a rich source for lipreading development. It was usually easy for the teacher or parent to ascertain when Jackie had established a new concept, since he always took the opportunity of expressing his understanding and knowledge through speech.

At the end of the first year in Nursery School

The number of words which Jackie appeared to understand in situations which were meaningful, was estimated at 350.

The number of words which he could lipread in any situation and which would be listed under his specific lipreading vocabulary was estimated to be 104.

At the end of the second year in Nursery School

The number of words which Jackie appeared to understand in situations where he would be called upon to demonstrate his general language understanding was estimated at 850.

The number of words which he was able to lipread in any situation, and which were considered part of his specific lipreading vocabulary, was estimated at 366.

At the end of the third year in Nursery School

Jackie's general lipreading ability appeared to demonstrate the capacity of understanding 1622 words.

It was found that Jackie's specific lipreading vocabulary consisted of 953 words.

The numbers given above include nouns, verbs, adjectives, etc., and the various ways in which these words would be used, indicating that the child had a broad understanding of each word, enabling him to understand its use whenever it was spoken.

It was believed that Jackie's understanding of language through lipreading, in both the general and specific sense, was sufficiently broad to allow him to participate comfortably in his hearing environment at this time. This background of understanding enabled Jackie to progress in all phases of his education after entering Grade I of the Day School for the Deaf. It was a strong support in learning to read, to speak better, and to feel confident about any new learning situation.

MISS NUMBERS: In planning our discussion this morning, I think perhaps it will be well to read the papers and present our ideas, and then throw the panel open to discussion from the floor, which we will welcome.

Mrs. Lassman sounds the keynote in our discussion. We are interested not only in theoretical knowledge. We are interested not only in what can be done and what ought to be done, but in what is being done for deaf children.

Mrs. Lassman represents the nursery school on this panel. We have representatives of different age levels in the rest of the panel, and different school situations. Sister Mary Laurentine represents the intermediate department. Miss Howes represents the advanced department, the high school department in Parker High School in Chicago. Miss Hammond represents the hard of hearing and deaf group of children in a large public day school, and I represent a residential school at the middle school level.

The title of my paper is "Speech Perception in Present Day Education for Deaf Children."

Speech Perception in Present Day Education for Deaf Children

By MARY E. NUMBERS and C. V. HUDGINS

At previous Association Meetings we have considered the subjects of Speechreading and Hearing as different entities. The purpose of this paper is to consider the concept of speech perception as representing an integration of speechreading and acoustic training. For it has long been our belief that the one supplements the other. This is all the more true at the present time, due to the rapid technical advances in the field of electrical amplification and the widespread adaptation of group hearing aids in our schools.

The traditional point of view in oral education has been that acoustic training retards lipreading. This point of view is clearly stated in an Association Committee report on Speech Reading in Schools for the Deaf, 1942.[1] That Committee was concerned about the effect upon speechreading of the increasing use of acoustic training. They felt that "Speechreading has been sacrificed" and pointed out that "Reading and the use of residual hearing are not substitutes for speechreading."

We agree with the second statement, but

suggest that even though reading and the use of residual hearing are not *substitutes*, they lend valuable assistance to the child who is acquiring skill in lipreading. The eyes of the person with normal hearing aid the ears so constantly under normal conditions that the habit of turning toward a speaker has become a polite social convention. In a similar manner, the ears aid the eyes of the deaf child and render valuable assistance to the perception of speech, even though with his ears alone he is unable to perceive a single word. Therefore, we cannot agree with the first statement that "speechreading has been sacrificed" because of the use of hearing aids.

Experimental evidence indicates that the sound of a voice amplified by the modern hearing aid acts as a natural summons to attention, and to hear even the slightest sound of a speaker's voice facilitates lipreading. Since the introduction of hearing aids into our schools, this has been pointed out repeatedly by writers interested in the problems of speechreading. In 1930, Mrs. Ewing, in her little book, "Lipreading," said, "I have been asked very often whether or not I think it advisable, in order to develop lipreading, to put the partially deaf boy beyond his range of hearing during lessons, so that he may rely entirely on speechreading. I should rarely if ever follow this practice. Hearing is the strongest incentive toward speech and language. It is the basis for the natural development of speech, and to deprive the boy of the sounds he *can* hear naturally is to take from him vital experience in speech and language which can be given him in no other way. Teachers need not fear that lipreading will suffer. If the boy is encouraged to hear and watch speech always, and if he receives adequate training in analysis of the movements which occur in speech, he will ultimately learn to use his ears and his eyes to the best advantage."[2]

Dr. Heider pointed out, 1943, that the training of residual hearing aids rather than hinders the development of lipreading.[3] He based this conclusion upon direct comparisons of scores obtained from tests of lipreading ability and degree of hearing loss. He demonstrated from studies of large groups of children at Mt. Airy and at Clarke, that pupils who had had considerable acoustic training were superior lipreaders. It is of interest to note that these tests for lipreading ability employed silent films, thus effectively eliminating all acoustic cues. Dr. Heider quotes correlation coefficients as high as .60 between lipreading ability and amount of residual hearing. This is a clear-cut indication that acoustic training does not interfere with lipreading but on the contrary promotes it.

In 1947 Miss Miriam Pauls, in her chapter in Hearing and Deafness,[4] says, "Any sound, however limited, helps the speechreader fill in the gaps and makes for easier communication . . . the use of a hearing aid never eliminates the need to learn speechreading. Both are integral parts of the same process and work together."

Hudgins, in a paper read at the Eastern Zone Conference of the American Hearing Society in Boston,[5] reported on a preliminary study relative to this problem. Specifically, the problem was, "*How much* better is speech perception when deaf children look and listen as compared to looking or listening used alone?" In order to determine *to what degree* hearing supplements lipreading, we conducted an experiment. We had available, as subjects, 25 pupils at the Clarke School who have habitually used group hearing aids during most of their years in school. They range in age from 10 to 16 years. They have hearing losses in the speech range from 45 to 103 db. The median loss for the group is 78 db.

The pupils were asked to write down two 50-word lists composed of familiar monosyllabic words. The lists were read by the teacher under the following conditions: (1) Lipreading only; (2) Hearing aids only; (3) Lipreading plus hearing aids.

One would expect the last condition, lipreading plus hearing aids, to give the best score. The question is, *How much better?*

The results showed that with lipreading alone, pupils attained scores ranging from 15 to 73% or an average of 43%. With

hearing aids alone, scores ranged from 0 to 91%, with an average of 21%. When both hearing and lipreading were used, the speech perception scores ranged from 28% to 97%, with an average of 65%. The averages in each of the above tests tell us little, since the individual scores were scattered over a wide range with considerable overlapping. It is worth noting, however, that without exception the scores of individual pupils for lipreading plus hearing aids were higher than those for lipreading alone.

An interesting fact brought out by this experiment is that hearing aids apparently are beneficial even though some of the pupils are unable to understand a single word through hearing alone. Since we are dealing with congenitally deaf children in this instance, we should expect scores for lipreading alone to be higher than those for the hearing aid alone, of course. The effects of acoustic training, however, are evident in the higher scores obtained under conditions in which lipreading is supplemented by hearing aids. The average gain for the 25 pupils in this case was 22%.

This morning we should like to report on a more recent experiment in Testing Speech Perception of Deaf Children. This year we have been conducting a series of lipreading and hearing tests with a class of 6th grade pupils who, with two exceptions, have been using group hearing aids throughout their school life. This class provided an excellent opportunity for studying the problem of speech perception in a group of pupils who had had the advantage of the best teaching we know how to offer in both lipreading and the use of residual hearing. Our tests were designed to measure achievement in speech perception by (a) lipreading alone, (b) hearing alone, and (c) a combination of both. The pupils ranged in age from 11.6 to 15 years. The degree of hearing loss for speech in the class covered a range from 60 to 103 decibels.

The test material used was 50-word lists of familiar monosyllabic words. These lists are constructed so that a single test unit may consist of either 25 or 50 words. In our series of tests we usually used a 25-word test unit. The lists had been previously equated for relative difficulty and so constructed that each list contains a representative number of consonants and vowels in the proportion that these sounds occur in English speech. Each list, therefore, constitutes a test unit that is interchangeable with all the other lists. A supply of differently scrambled versions of each list made it possible to use the same word-lists over and over without the possibility of the word-order becoming familiar.

The testing method was briefly as follows: The pupils were given ample preliminary training in the use of the methods of testing before the actual testing program began. During the test the words were read at a constant level of intensity, the speaker monitoring her voice by a sound-level meter. The rate of reading allowed ample time for the pupils to write down the words. The individual test words were read in the carrier-phrase, "Write — now."

The tests were given under two conditions: (1) the pupils were allowed to look at the speaker as well as to listen over their earphones, and (2) the pupils merely listened. In each of these conditions the test lists were read at a constant level, as stated above, but at the same time it was possible to vary the intensity of the speech in the earphones by means of an attenuator at the output of the hearing aid. Thus it was possible to obtain scores over a wide range of intensities beginning at a sub-threshold level (lipreading alone) and successively increasing the intensity in steps of 10 decibels to a level of 30 db above the threshold of the individual pupils.

The auditory threshold for speech was obtained for each pupil at the beginning of the testing period. This threshold differed for each individual pupil, of course, since their hearing losses differed, but this difference was compensated for by adjustment of the individual desk volume controls. This pre-established threshold became the common reference level for increasing or decreasing the intensity of the speech by measurable amounts in terms of decibels.

Successive tests in condition 1 (lipreading plus hearing) were run at the following intensity levels: 10 db. below threshold, *at* threshold, and at 10, 20, 25, and 30 db. above threshold. Previous experience with these word-lists has shown that normal hearing subjects are able to get better than 90% of the words at 30 db. above their threshold.

This procedure enabled us to measure the effects of varying amounts of hearing upon lipreading. At the two lowest levels (10 db. below and at the threshold) the number of words correct represented the pupils' ability for pure lipreading. Then as the intensity was increased above the threshold the scores were representative of lipreading plus the amount contributed by hearing.

In condition 2 a second series of scores were obtained by having the pupils listen without looking at the speaker. The test series were conducted in the same manner as described above with the exception that the series began with a speech level at threshold value and was increased in steps of 10 db. up to 30 db. in successive tests.

Tests were scored in terms of percent words correct in a given list. Two sets of scores were obtained for each of the lipreading-hearing tests: (a) credit was allowed for all homophenous words as well as the correct words; and (b) credit was allowed for correct words only. It is of interest to note, as we shall see later, that the differences in the two sets of scores decrease as hearing is added to lipreading.

The results of the study can best be shown in the form of graphs in which are plotted the percent words correct versus the speech intensity in the earphones. The points on the graphs represent average scores of six to eight word-lists read at each intensity level. Each point, therefore, represents the average score of 150 to 200 words.

Graphs for the 8 pupils are shown in Figure 1. The horizontal scale represents the speech intensity in decibels relative to the auditory threshold of each pupil. The threshold is represented by 0 db. on the scale. The absolute intensity value of the speech at 0 db. varies for each pupil depending upon the degree of hearing loss. The amount of change in intensity level, however, for the successive tests above and below 0 db., was constant for the group.

The perpendicular scale represents the percentage of words correctly understood. Three sets of speech perception scores are plotted on the graphs: (a) lipreading and hearing combined when homophenous words are scored as correct, (b) lipreading and hearing combined when only the correct word is allowed, and (c) hearing only.

The first two points (at the left) of the two upper curves represent lipreading only, since the speech was delivered to the ears at levels of —10 and 0 db. relative to the auditory threshold. Points above 0 db. show the effect of increasing amounts of speech intensity which enables the ear by greater and greater degree to supplement the eye in the speech perception process.

Pure tone audiograms are inserted in the graphs to indicate the hearing loss of each pupil. Additional audiometric data are presented (upper right) in the form of average losses for both ears at the frequencies 512, 1024, and 2048 cps.

The first four graphs, A, B, C, and D (Fig. 1), represent the results obtained from pupils who by ear alone, following acoustic training, are able to understand some of the test words. While the pure lipreading scores of this group are relatively high, there is a spectacular increase in the speech perception scores of these pupils as hearing is combined with vision.

Graphs E, F, G, and H of the same Figure represent the data obtained from pupils whose losses are 100 db. or more. These pupils have had the advantages of acoustic training but they are still unable to understand speech by ear alone. Yet in each case, as the speech intensity is increased to successive levels above their auditory thresholds, there is a definite rise in the speech perception curves indicating that the ear is contributing to the speech perception process.

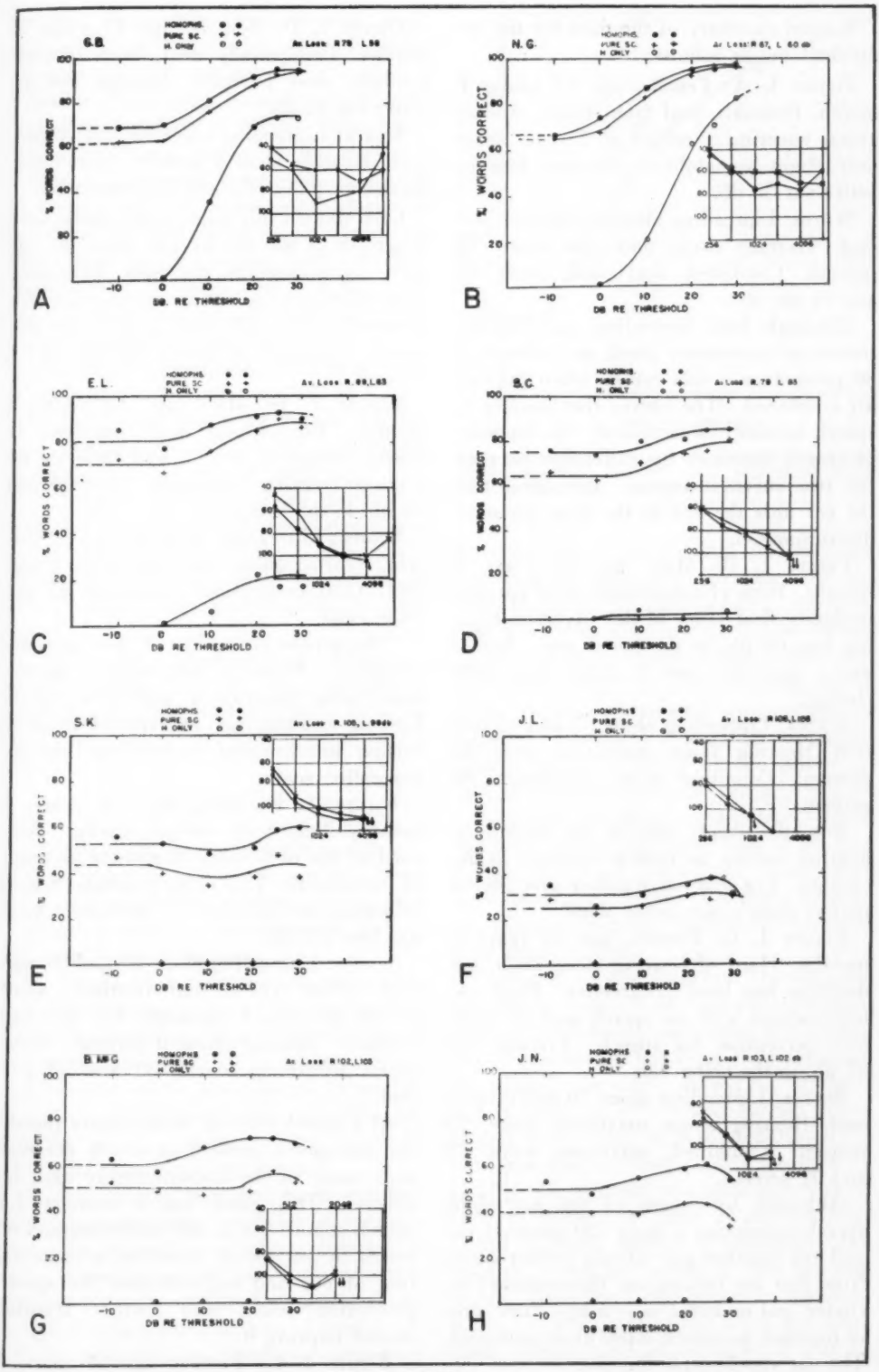

G.B.
N. G.
E. L.
S. C.
S. K.
J. L.
B. M. G.
J. N.
% WORDS CORRECT
DB. RE. THRESHOLD
A
B
C
D
E
F
G
H

FIGURE 1

A brief summary of the data for the individual pupils follows:

Figure 1, A: Female, age 13 years, 1 month. Probably deaf from birth. Audiograms covering a period of 7 years show only slight variability. Average loss in better ear 58 db.

Scores: Lipreading alone, 62 and 67 percent. Hearing alone, maximum score, 72 percent. Combined, maximum scores, 93 and 94 per cent.

Although both lipreading and hearing scores are reasonably good, an increase of 30 percentage points results when the two are combined. The curves rise steadily as speech intensity is increased. As intensity of speech increases the difference between the two curves decreases, indicating that the ear aids the eye in the finer phonetic discrimination.

Figure 1, B: Male, age 13 years, 4 months. Born of congenitally deaf parents, probably deaf from birth. Average hearing loss 60 db. in the better ear. Audiograms over the past 7 years show little change.

Scores: Lipreading alone 65 and 66 percent. Hearing alone, maximum score, 82 percent. Combined score, maximum, 96 percent.

Note the steady rise in the lipreading-hearing curves as speech intensity is increased. Eye and ear together give almost perfect speech perception score.

Figure 1, C: Female, age 13 years, 8 months. Hard of hearing since birth, but deafness has been progressive. Pupil entered school with no speech and no auditory perception for speech. Average loss 83 db. in the better ear.

Scores: Lipreading alone 70 and 80 percent. Hearing alone, maximum score, 20 percent. Combined, maximum score, 88 and 92 percent.

Although by means of the ear alone speech perception is poor (20 percent) ear and eye together give almost perfect score. Note that the two curves (homophenes included and excluded in scoring) draw closer together as speech intensity is increased. The ear supplements the eye.

Figure 1, D: Female, age 13 years, 8 months. Congenitally deaf; born of congenitally deaf parents. Average loss in better ear 78 db.

Scores: Lipreading alone 65 and 76 percent. Hearing alone 2 percent. Combined, maximum scores, 82 and 86 percent.

Even though this pupil understands only 2 percent of the test by ear alone the ear adds 16 percent to the pure lipreading score when eye and ear are employed simultaneously. The difference between the two curves decreases as speech intensity is increased.

Figure 1, E: Male, age 14 years, 5 months. Congenitally deaf; has been in Clarke School 2 years; had little or no acoustic training previously. Average loss 98 db. in the better ear.

Scores: Lipreading alone 42 and 52 percent. Hearing alone, maximum score 0 percent. Combined, maximum scores, 45 and 58 percent.

(The scores are scattered, averages unreliable). There is only slight improvement when hearing is added to vision. Further training may be expected to show further improvement in combined speech perception score.

Figure 1, F: Male, age 11 years, 6 months. Born with normal hearing; deafened at age of 8 years 11 months as result of encephalitis. Two years in Clarke School following the incidence of deafness. Average loss 105 db.

Scores: Lipreading alone 25 and 31 percent. (Poor vision and relatively short period in school accounts for the low scores.) Hearing alone 0 percent. Combined, maximum scores, 32 and 38 percent.

At a speech level of 30 db. above threshold the speech perception scores decrease as a result of the uncomfortably high intensity. This pupil has a memory for speech sounds but is able to understand no words by ear alone; however, a combination of eye and ear increases the speech perception score, and further training should improve it.

Figure 1, G: Female, age 14 years, 5

months. Profoundly deaf since age of 2 years as a result of double mastoidectomy. Average loss 102 and 105 db.

Scores: Lipreading alone 50 and 60 percent. Hearing alone 0 percent. Combined, maximum scores, 56 and 74 percent.

Speech perception is definitely improved by acoustic training in spite of the fact that no words are understood by ear alone. At the highest speech intensity level (30 db.) the scores are reduced. Speech at this level is uncomfortably loud. The two curves remain separated throughout.

Figure 1, H: Female, age 15 years. Congenitally deaf. Average loss 102 db.

Scores: Lipreading alone 40 and 50 percent. Hearing alone 0 percent. Combined, maximum score, 43 and 60 percent.

At speech intensity of 30 db. above threshold the scores are reduced due to the uncomfortably loud speech. (A speech level of 30 db. above a threshold of 102 db. is uncomfortably near the threshold of pain for most ears.) The two curves remain separated over the entire range. The combination of eye and ear, however, give a decided advantage over eye alone in spite of the fact that no word is understood by ear alone.

Summary

The data may be summarized as follows:

1. Speech perception by lipreading alone is generally high for the entire group with a single exception, regardless of the severity of the hearing loss.

2. Pupils who obtained relatively high scores by hearing alone are just as good or better at lipreading than those who never understand any word by ear alone.

3. Speech perception scores invariably increase as hearing supplements vision, regardless of the ability of the pupil to understand speech by ear alone.

Objections may be raised to the employment of monosyllabic word-lists as test material for lipreading on the grounds that without context single words do not provide ample opportunity for maximal expression of lipreading ability. Certainly, it can be said that monosyllabic words of this type constitute a more difficult task than that of connected discourse. It has been found in previous studies, however, that while single words are more difficult for the lipreader, scores obtained from sentences and single words are highly correlated. A score obtained from one type of material, therefore, enables us to predict what the score would be for the other.

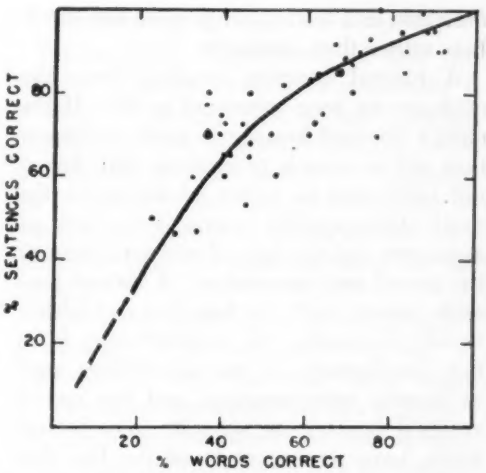


FIG. 2.—CORRELATION OF SPEECH PERCEPTION SCORES WITH (A) MONOSYLLABIC WORDS AND (B) SIMPLE SENTENCES

With this in mind we ran a series of tests under the same conditions as those described above, but using lists of ten sentences instead of word-lists. The scores were invariably higher for the sentences but highly correlated with those obtained from the word-lists.

Figure 2 is a scattergram showing the correlation between the two sets of scores. The points indicate individual test scores. A curve of best fit has been drawn through the points. The curve shows, for instance, that a score of 50% words correct corresponds to a score of approximately 75% sentences correct, and a word score of 75 to 80% corresponds to a sentence score of 90% or better. A curve of this type becomes a useful device in translating lipreading scores for words to that for sentences. Since word lists are easier than sentences to administer and to score and more easily standardized as test units, it may be

desirable in a testing program to use word-lists rather than sentences.

A natural question resulting from the evidence we have presented is this: If the child's residual hearing is such an important aid in speech perception, why has it not been used to better advantage in the past? One possible reason is the lack of apparatus and the lack of understanding of the use of such apparatus. A second possible reason might be found in our educational philosophy. In concentrating upon the development of special abilities such as speech, speechreading, and the use of residual hearing as separate and distinct skills, have we lost sight of the fact that the education of the deaf child is an integrated process?

Today modern apparatus permits the exploration and the utilization of the entire auditory area—from the weakest audible sound to the highest tolerable intensity. Therefore, the auditory function may be adequately trained and become a very useful adjunct to vision in speech perception. Such modern apparatus can be purchased, but a change in our educational philosophy cannot be effected so simply or so quickly. We regard the results of this study as a challenge. We are offering them to you in the hope that they may stimulate thinking, that similar studies may be made elsewhere, and that through our united efforts present-day education for the deaf child may rise to higher levels. *Educating* deaf children is our *job!* Let us do it in the most normal and natural way. Let us use all available sensory avenues. Let us keep an eye not only on things as they are, but as they *can be.*

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4. Davis, H.: (Ed.) "Hearing and Deafness" New York: Murray Hill, 1947, Chapt. 9, pp. 257-275.

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MISS NUMBERS: Miss Hammond, will you tell us what you do with lipreading in your school at Dearborn?

Speechreading in a Public School

MISS HAMMOND: At the Lowrey School, a public school in Dearborn, there are approximately 1800 children, from kindergarten through the 12th grade. The Department of Special Education includes the deaf and hard of hearing, the blind and partially blind, all types of orthopedic, cardiac, lowered vitality, brain injured, and mentally retarded groups. The department is right in the school.

In the department for the deaf and hard of hearing there are 50 children. Of this group, 22 are profoundly deaf and the remaining 28 are hard of hearing.

The children in the beginning group do not attend any regular grade—they remain in a class with a teacher of the deaf. However, they eat with the regular elementary children, play with them, ride to and from school with them—consequently they are in contact with hearing people a great part of each day, both in school and at home. These pupils and those in the intermediate department have very little hearing. A group hearing aid is used in most of their classwork. We feel that any recitation period is training both in speechreading and in residual hearing, and if a child is to enter a regular grade for either full time or part time, this training is a vital part of his education, to say nothing of its importance in his after-school life.

Several of these children have individual hearing aids. During several periods a day, they are on the group aid instead.

We feel that speechreading has been greatly improved by the use of hearing aids. Speechreading supplements the child's hearing. To illustrate: Annually each child in our department is certified by an otologist. One youngster with a severe hearing loss was in a regular 4A grade this past spring. He wears a hearing aid constantly and is an excellent speechreader. During the doctor's examination, he gave the boy a whisper test with the hearing aid

off. Eddie turned to me and said, "Miss Hammond, I could hear what the doctor is saying if he'd let me look at him." It was interesting to notice how the boy kept turning his head, unconsciously, toward the doctor.

Success in understanding has an important psychological effect upon any child. It seems logical to allow a deaf child to use his hearing and lipreading to increase his understanding. He will be more interested and will participate more when he can use, not only his limited degree of hearing, but also his sight. In turn, his success will give him the psychological boost that each of us needs.

The policy in the Lowrey School is to have the deaf and hard of hearing children in a regular grade with normal children whenever it is possible. This applies to the other groups in the Special Education Department, too.

In scheduling the children for speechreading, they are grouped according to age and grade whenever this is possible. About 50 per cent of these children have individual hearing aids which they wear constantly. During their speech reading lessons, the children are encouraged to watch and to hear. What a child cannot get through his hearing, he can get through his vision.

Monday night Mr. Tenny told you about some of our deaf pupils. The girls who were graduated from Fordson High School last week have already been referred to Rehabilitation and hope to secure positions soon. The boys who attended Ford Trade School are employed regularly—two at the Ford Rouge plant. The remaining boy is working in an industrial plant west of Dearborn.

MISS NUMBERS: Thank you, Miss Hammond, for condensing your remarks. We greatly regret having to hurry, but it is necessary because of the trip planned for this afternoon.

May I introduce Sister Mary Laurentine, of St. Joseph's School in St. Louis. Another teacher from that school spoke to us yesterday about language, and we shall be glad to hear about their work in lipreading.

Lipreading, An All-Day Program

SISTER MARY LAURENTINE: I find this topic of lipreading very hard to discuss. It is such an integral part of our program that it is almost impossible to take it out and separate it from speech and language, for it seems to me lipreading depends on speech and language. If you do not have the other two, you will not have the lipreading.

Lipreading is not just a special program of the day. It is an all-day program. It must go on from morning until night. When you are studying a foreign language, you go out and you learn the basic vocabulary. This the deaf child does in the preschool. If you really want to master the language, you put yourself in a position where the language is spoken around you all the time and you must learn to use it if you want to get along. This is what happens to the deaf child in the intermediate school. It is his only means of getting information, and if he is curious, he wants to know. He must lipread if he sees no other means of getting information.

You saw the materials which Sister Anna Rose called junk yesterday. To a teacher it is valuable "junk." It was a visual aid, that is true, but it demanded speech and lipreading. The deaf child is required to give speech in order to participate in the program. There comes a time when Sister takes that visual aid and turns down the card which has on it "chirp," for example, and says to the pupil, "Chirp," and he must come back with the verb. The visual aid has been taken away. His only means is to get it through lipreading.

With us, lipreading is acquired only by giving it morning, noon, and night. Perhaps we have an advantage in that we are a residential school and the children are with us from the time they get up to the time they go to bed. The child gets lip reading in the dining room. If he is out on the ballfield, he learns the rules. He learns how to umpire a ball game. He plays basketball, and that is what every boy is interested in, so he learns to lipread basketball language.

What Miss Numbers has done in the field of research makes me feel good. We have always believed that working with group hearing aids was important. It is a "must" in our school. Every child from the first to the eighth grade works on a group aid. He has no choice in the matter. We never knew just how much he got out of it, but we felt he was getting something. It is our task to educate him. We want to do the best job we can. Therefore, we want to use every means available to make the deaf child as normal a child as possible. Lipreading is one means.

MISS NUMBERS: Thank you very much.

Now we would like to hear how Miss Howes handles the situation with a group of older children in Parker High School at Chicago.

High School Lipreading

MISS HOWES: In Parker High School, we have had from 60 to 70 pupils, who represent every classification of a deaf or hard of hearing child. We have children who have come up through the deaf department of the elementary school. We have children who have lost their hearing maybe two weeks before they entered high school. We have children who have been hard of hearing all of their lives, and children who have recently acquired a hearing loss.

From 12 years' experience, I would make these observations: In general, after a reasonable amount of training, the hard of hearing child excels in getting the general idea of connected discourse that one gets in a narration or a story or an experience of any length at all. It is much easier for the hard of hearing child to get the general idea of that narration than it is for the congenitally deaf child, unless the deaf child has acquired normal comprehension and fluency in language.

Any deaf child, however poor his language, excels in the type of thing that is related to some experience he has had. It has been my experience that he has learned speech and lipreading by a careful analysis of speech movements, and that is what is needed in this type of work.

One experiment that we conducted this last year was rather revealing to me. I had a wire recorder. I sent for records from the Linguaphone course in American English. I took these records off on the wire recorder, placed the recorder on the table, and asked the pupils to listen. Then we have the books in which the exact content of the record is printed. First, I asked the pupils just to listen. Even the child with the most hearing only got a few scattered words. Then I asked them to listen while I read with the recorder, so that they could watch my lips. They still got only a few recorded words. Then I let them open the books and follow through, and after that the deaf and the hard of hearing children—we cut it down to sentence by sentence—could get every sentence from hearing or from lip reading.

I think that bears out Miss Numbers' statement that while reading and auricular training would not take the place of lipreading, they certainly are a help in acquiring lipreading.

One very interesting thing about that was that the congenitally deaf children, by placing their hands on the table, could follow accurately every word as it was spoken over the wire recorder, just by vibrations. They have no perception of speech sound at all. I thought that was very interesting; and also I saw a big value to be gained from it, in that they learned to follow speech at a normal rate, because these records are scheduled at a normal speech rate, and they learned to watch for normal phrasing, because these records are carefully designed to give normal speech phrasing.

MISS NUMBERS: We want to know why; we want to know how; we want to know not only what can be done but what has been done. We have to keep thinking in both directions—what is being done today and what can be done in the future—and we want to use all of the equipment, all of the ideas that we have at hand. Thank you.

MR. MORRISON: I am sure you will all agree with me that this has been a very excellent panel. We are very much indebted

to Miss Alcorn and all those who prepared the program. Miss Alcorn says we must adjourn at a quarter to 12:00 because we are going to Ypsilanti, so there is not much time for questions.

PROFESSOR BORIS MORKOVIN: I have just one question. A statement made by Miss Numbers is rather misleading to me, because I do not know whether that child eight years of age has a speech pattern or not. If he has, I wonder if any other children have speech patterns, because the whole experiment assumes different characteristics if some children had speech patterns before they lost their hearing.

We have found with the soldiers who lost their hearing, even those who had approximately a 102 decibel loss, the hearing aid played an enormously important role in learning speechreading. First this hearing aid was absolutely obnoxious to them, but as soon as they got the rhythmic pattern of speech, immediately the hearing aid gave them the illusion that they were hearing perfectly through hearing and not through lipreading.

MISS NUMBERS: I would like very much to reply. That child of whom I spoke became deaf at the age of eight years and eleven months from encephalitis. He had a memory of sound; but he is so profoundly deaf, it is very difficult to reach him at the present time. He gets the rhythmic pattern of speech, but he does not interpret it into words. All of the other children were born deaf or born with very, very little hearing. They have all had to be taught to read the lips, taught speech, and taught language.

MR. MORRISON: We will adjourn now to go to Ypsilanti.

Whereupon, at 12:00 o'clock noon, the meeting was adjourned.

MR. HERMAN GOLDBERG OF JUNIOR HIGH SCHOOL 47, NEW YORK, AND MR. E. B. BOATNER OF THE AMERICAN SCHOOL AT HARTFORD, ENJOYING ONE OF THE EXHIBITS

Annual Business Meeting

Friday, June 25, 1948

THE fifty-eighth annual business meeting of the American Association to Promote the Teaching of Speech to the Deaf was called to order by President C. D. O'Connor on Friday morning, June twenty-fifth, at the Detroit School for the Deaf, at nine o'clock.

Greetings and good wishes for a successful meeting were read, from the following members of the Board and Advisory Council: Dr. Harris Taylor, Dr. E. A. Gruver, Mrs. Spencer Tracy, Miss Margaret Bodycomb, Dr. Ethel A. Poore, and Mr. Boyd Nelson.

The minutes of the preceding meeting were read by the Secretary, Mr. John Yale Crouter, as follows:

Minutes of the Fifty-Seventh Annual Meeting of the American Association to Promote the Teaching of Speech to the Deaf, Held in Wissinoming Hall, Pennsylvania School for the Deaf, Mount Airy, Pa., on Friday Afternoon, May 16th, 1947.

The meeting was called to order at two-thirty, with the President, Dr. Clarence D. O'Connor, presiding.

The call to the meeting was read by Miss Josephine B. Timberlake, Executive Secretary, and in the absence of the Secretary, Mr. John Yale Crouter, Mr. Charles A. Bradford was asked to serve.

Dr. J. C. Steinberg of the Bell Telephone Laboratories, a Director of the Association, spoke briefly of the work being done in the Laboratories of interest, and possible assistance, to the work with the deaf and hard of hearing.

Because the year 1947 marks the one hundredth anniversary of the birth of the Association's founder, Alexander Graham Bell, there were special tributes to his memory. Mr. Edwin Stanley Thompson, a charter member of the Association, reminisced informally on his personal association with Dr. Bell. Miss Timberlake read a letter from Mr. John D. Wright in which he told some interesting anecdotes relating to Dr. Bell.

After the election of five Directors whose names had been submitted—John Yale Crouter, Dr. Clarence D. O'Connor, Herbert A. Poole, Mrs. H. T. Poore, and Dr. J. C. Steinberg—the meeting was adjourned, and the talk continued in the girls' sitting room, where tea was served.

In addition to the Mount Airy teachers, the meeting was attended by twelve teachers from the New York School at White Plains, several from the Archbishop Ryan Memorial Institute, and three members of the Volta Bureau staff. Dr. Leonard Elstad, President of Gallaudet College, attended the Directors' meeting held in the morning, but was unable to remain for the afternoon.

Charles A. Bradford,
Acting Secretary.

Upon motion duly seconded, the minutes were accepted as read.

Dr. O'Connor next called for the Treasurer's statement, and Miss Timberlake, in behalf of the Treasurer, Mr. Herbert A. Poole, submitted a summary of receipts and disbursements covering the period January 1 to June 15, 1948, supplementing his customary full report to the Directors in January. This statement showed a balance, as of December 31, 1947, of $7,288.23; receipts since that time, $15,509.88; disbursements over the same period, $17,734.55; leaving a present balance of $5,063.56.

Upon motion, duly seconded, the summarized statement was accepted, and the full statement placed on file.

With reference to the excess of disbursements over receipts, President O'Connor commented that the Volta Bureau, like

most schools for the deaf at the present time, was more familiar with red ink than with black. He mentioned the great cost of Association meetings and the publication of proceedings, and suggested that the price of Association membership and the accompanying Volta Review subscription might have to go up. "Today," he said, you can buy a life membership for $50, and never have to pay for the Volta Review again. It is the only bargain I can think of that is available at the present time. Become a life member."

President O'Connor then recognized Miss Clara E. Newlee, of Chicago, long time Board member and tireless worker for the Association.

MISS NEWLEE: I would like to read a communication from the Chicago Oral Teachers' Club, a club made up of the teachers of the deaf in the Chicago Day Schools:

To Dr. Clarence D. O'Connor, President, and to the Members of the American Association to Promote the Teaching of Speech to the Deaf, Summer Meeting of 1948, Detroit Day School for the Deaf, Detroit, Michigan:

It is a pleasure and an honor to present, in the name of the Chicago Oral Teachers' Club, a memorial gift of Fifty Dollars ($50.00) for the "new" Volta Bureau, in honor of

Mary McCowen

who pioneered the oral education of the deaf and hard of hearing children of Chicago.

Miss McCowen introduced oral teaching in the Chicago Day Schools in 1906. She trained oral teachers of the deaf in her private school from 1883, and later in the Chicago Teachers' College. She was prime mover in sponsoring the Illinois law for establishment of day schools for the deaf.

Miss McCowen founded the Chicago Oral Teachers' Club in 1898; the Club is celebrating its fiftieth anniversary this year.

Miss McCowen was a charter member of the American Association to Promote the Teaching of Speech to the Deaf, and served on the Board of Directors for many years.

It is altogether fitting, and Chicago teachers consider it a privilege, to present this memorial, to the Volta Bureau, in honor of Mary McCowen.

PRESIDENT O'CONNOR: Miss Newlee, on behalf of the Association and the "new" Volta Bureau, I am happy indeed to accept this generous gift in memory of Miss McCowen. Miss Timberlake tells me that this will serve as a very fine nucleus for what she hopes will be a large donation of funds to buy furniture. I understand that the wear and tear on nylons has been pretty bad at the Volta Bureau, to say nothing of the antiquated equipment the staff has been struggling with. I told you Monday night about the plans to remodel the Volta Bureau. We are hoping to have it a thing of beauty as well as efficiency. The work is progressing nicely; and although it may place us back where we will have to come to you more frequently for contributions, the efficiency of our service to the deaf will increase greatly.

The next matter of business will be the election of Directors. According to our Constitution, nominations must be made one month in advance of the scheduled business meeting, in the form of letters to the President and the Secretary; and only those names that have been presented in that fashion may be offered to you today for consideration.

I would like to ask Mr. Alan Crouter, Mr. E. A. Bolling, and Dr. Carl Rankin if they will serve as judges of the election. We have ballots which you can mark quickly, and we will proceed to other matters of business while they are being counted. The six members of the Association who have been nominated as Directors are: Charles A. Bradford, Helen S. Lane, Clara E Newlee, Betty (Mrs. A. H.) Roessler, Louise (Mrs. Spencer) Tracy, and Olive A. Whildin. We will now proceed with the election.

(The ballots were distributed, marked, and collected, and the judges retired.)

The next point to be taken up will be your action on the report of the Committee on Constitution and By-Laws, and the resolution submitted to you on Tuesday afternoon at a special business meeting. You will now be asked to vote upon this resolution.

(Dr. O'Connor re-read the resolution presented Tuesday afternoon—see page 415.)

You have heard the resolution as presented. This matter is now open for discussion and action.

SECRETARY CROUTER: I move adoption of the resolution.

PRESIDENT O'CONNOR: It has been moved that the resolution be adopted.

MISS NEWLEE: I second the motion.

PRESIDENT O'CONNOR: It has been seconded. All in favor of this motion, signify by the usual sign.

(Chorus of Ayes)

PRESIDENT O'CONNOR: To the contrary?

(No response)

PRESIDENT O'CONNOR: It is unanimously carried.

Ladies and gentlemen, as soon as the legal formalities can be carried out, we shall refer to our organization as the Volta Speech Association for the Deaf. I believe that the members have chosen a very suitable name. It incorporates within itself all the implications of the objectives of our organization, and it also pays tribute to the interest and the far-seeing vision of Dr. Bell by including the word "Volta," the name that he gave to the Volta Bureau. Also, it includes "Association," the name that he gave to the organization which he hoped would extend the teaching of speech to the deaf. The Volta Speech Association for the Deaf is a very significant name, and a very fitting one. I thank you very much for your action.

The next point in connection with the report of the Committee on Constitution and By-Laws is to adopt certain changes that have been recommended.

President O'Connor pointed out that the action in regard to the change of name had accomplished the most important change in the Constitution recommended in the report of the Committee on Constitution and By-Laws. The next proposed change was the addition of a seventh section under Article I. This section would read:

The absence of any Director from three consecutive annual meetings of the Board of Directors shall automatically create a vacancy in the Board, which may be filled by the remaining members.

The only other change would be the deletion of the word "Auditor" from the list of officers in Article VI, Section I, as explained at the special business meeting on Tuesday.

Upon motions duly seconded, both of these alterations were unanimously approved.

Resolutions

Dr. O'Connor then called upon Mr. Herman R. Goldberg, Chairman, for the report of the Committee on Resolutions, which Mr. Goldberg presented as follows:

RESOLVED, that the thanks of the American Association to Promote the Teaching of Speech to the Deaf be hereby tendered to Miss Sophia Alcorn, Principal, and to her staff at the Detroit Day School for the Deaf for their generous hospitality and untiring effort in making the Summer Program Meeting so pleasurable and professionally profitable.

RESOLVED, that the sincere thanks of our members are due to Miss Josephine B. Timberlake and her staff at the Volta Bureau for the very excellent presentation, in poster form, of the ever-increasing scope of the Bureau's work on behalf of teachers and parents of the deaf.

RESOLVED, that the thanks of the members and guests of the Association be tendered to Dr. Clarence D. O'Connor, President, for his excellent address delivered at the opening session of the meeting and to Mr. Arthur Dondineau, Superintendent of Detroit Public Schools, Miss Anna M. Engel, Director of Special Education, and Mr. John Tenny, Director of Special Education of Wayne University, for their messages of welcome.

RESOLVED, that we express our gratitude to Dr. Bruce Proctor for his excellent illustrated lecture on "What the Medical Profession is Doing to Help the Deaf Child."

RESOLVED, that the sincere thanks of the Association be given to the discussion leaders and participants of the various panels, and to the instructors conducting classroom demonstrations.

RESOLVED, that we gratefully acknowledge the gracious friendliness and hospitality of Mr. John A. Klein, director of the Lutheran Institute for the Deaf, and his staff, for arranging a visit and luncheon at his school.

RESOLVED, that we, as an association, express our thanks to Dr. Francis E. Lord and the staff at the Horace H. Rackham School of Special Education at Ypsilanti, Michigan, for arranging a visit for the delegates of this Association meeting to his school; and to the staff of the Speech Clinic of the University of Michigan at Ann Arbor for the opportunity to inspect their facilities; and to Miss Alcorn and to Miss Hildred Gross, Supervisor of Speech Correction of the Detroit Public Schools, and her staff, for providing transportation to and from Ypsilanti and Ann Arbor.

RESOLVED, that the appreciation of the members present go to the various organizations and individuals who exhibited latest developments in television, hearing aids, visual-auditory teaching equipment, audiometers, textbooks, etc.

These resolutions are respectfully submitted for your consideration.

Herman R. Goldberg, Chairman
Margaret Gruver.

Dr. O'Connor thanked the committee, some of the other members of which had been called away, and presented the resolutions for consideration. They were adopted unanimously. He then recognized Miss Sophia Alcorn.

MISS ALCORN: I would like very much to say that this program was not the work of one person. I had a wonderful program committee. Each one of them sent in suggestions for each panel, and from the suggestions the final program was arranged.

In addition to that, we had the entire effort and co-operation of the teachers of the School for the Deaf. I want to ask them to stand so that all of you can see them.

(The teachers arose and were warmly applauded.)

MISS MARY NUMBERS offered a resolution to form the basis of a statement of Principles for the Association. It was adopted, and will be published after completion by a committee.

PRESIDENT O'CONNOR: While we are waiting for the report of the Elections Committee, we have a good opportunity to thank all of you for coming. Some schools are particularly well represented. One school has a head who is so interested in the professional development of his staff that he has made it possible for almost his entire faculty to attend. This has been done in a very interesting way, which I hope to try myself and which I hope other superintendents will try. By the appropriation of a sum of money by the school's governing board, each teacher was allotted a certain sum to come to this meeting, because of the opportunity it afforded for professional development. The superintendent is Mr. W. J. Morrison, of the Ontario School for the Deaf. Eighteen members of his staff and Mrs. Morrison are present at this meeting.

Other well represented school systems are the Chicago Day Schools, the Central New York School, the Clarke School, and the Minneapolis Day School. Delegates who have come the greatest distance are two from Vancouver, Washington.

The Election Committee has handed me a report of the tabulation, and the following Directors have been elected for the next three years: Charles A. Bradford, Helen S. Lane, Clara E. Newlee, Louise Tracy, and Olive A. Whildin.

I thank the members of the Election Committee for their efficient handling of this election. This brings us to the close of our business meeting.

The Assessment of Hearing Loss

THE final session of the Summer Meeting opened at ten o'clock on Friday morning, June 25th.

PRESIDENT O'CONNOR: There is no phase of our work which is more challenging, or in which there is more interest, than in the use of hearing and all factors that apply to this valuable medium.

I do not know of anyone who is better qualified to lead this morning's program than Dr. Silverman. For years he has been one of the leaders in research to develop better facilities for the use of whatever hearing may remain in our children. I am very happy indeed to present Dr. S. Richard Silverman, Director of Central Institute for the Deaf, who will take charge of this panel and introduce his speakers.

Introduction

DR. SILVERMAN: Before going on with the business, I shall make a few impromptu remarks which I hope will have application to the panel's work. We have decided that we should all present our material and then open the discussion to questions.

I was very much pleased to hear Miss Numbers's resolution and the remarks that Dr. O'Connor just made. It seems to me that if there is a keynote to this meeting, it is the strengthening of the multi-sensory approach to the teaching of speech to the deaf through the use of hearing. One may quibble with the term "hearing," but I think that it is for the academicians to quarrel about whether a sensation is tactile or auditory. For practical purposes it makes no difference to us what the sensation is.

Unfortunately, I could not be here the first couple of days, but I heard that keynote sounded by Mrs. Scott when she gave her paper on the Speech panel. One or two of the people on the Lipreading panel had the same thing to say. Miss Numbers presented some interesting evidence—although she was talking about lipreading, she was making an excellent case also for the use of auditory training.

In the case of auditory training, or acoustic training, or whatever you choose to call it, there must be a zeal for it. Very frequently, classroom teachers are afraid of gadgets. I find there is often an unconscious rejection of auditory training, using the "gadget" as an excuse. "I just can't do this. It doesn't work." There must be a zeal for making it work.

I believe very fervently that the next few years will justify the approach through hearing. Until that time, we must proceed on a rather crude, empirical basis. However, the fervor of the evangelist and the grandiloquence of the phrasemaker are not sufficient to get results. I want to say a word or two about the researcher. Very frequently when an individual presents curves or charts or statistics, I hear a subterranean undercurrent: "It is not practical. They don't know what they are talking about. It won't enable me to teach long division or to straighten out 'yellow an apple'." I should like to make this plea for the researcher. He is not a Santa Claus who drops down the pedagogical chimney and leaves beautifully wrapped up packages of techniques and devices. He is merely trying to get at the truth, and sometimes he is plagued by individuals who insist that *tomorrow* he must have a way of getting better speech. I would like to plead for a tolerance of the researcher as he takes his time, as he thinks through his problems. He needs an atmosphere of freedom.

On the other hand, you clinicians, practitioners, and teachers must make suggestions and put questions to him that may lead to what you call practical results. Remember, much of the research that is being done is just capital in the bank at the moment. It is not being used, but it is being stored up, and I am sure that soon, as we have done in the past, we will begin to draw ample dividends from that research.

Another question about research that has concerned me for some time is the question of the single school for the deaf doing research by itself. In certain research problems there is not adequate sampling in a single school to do justice on a conclusive basis. Some of us may not have a certain type of age level. We may not have a certain background. We may not have the homogeneity of grouping. Fundamental research now is a matter of cooperation and teamwork. The man in the garret who discovers cures for cancer is out. No one person now by himself is qualified to carry on research, even in the restricted specialties such as ours. That point has been made many times, but I would like to illustrate it on a practical basis.

For the past year, we have been engaged in a very wholesome cooperative research project with the Clarke School for the Deaf. We at Central Institute are coping with this problem of use of residual hearing, all the way from the engineering drawing board and constructing apparatus, to the type of thinking you heard and saw Miss Numbers so ably present yesterday on the payoff on some of these issues. Notice, too, the painstaking care which Miss Numbers and Dr. Reiter and Dr. Hudgins have had to take. And yet I am sure that they feel they have not yet conclusively answered the simple question: Does the use of residual hearing interfere with lipreading? Notice the pains to which they are going in a fair, businesslike, and scientific manner to get an answer to what to some of us might be an obvious question that needed no answer.

I would like to labor this point a little more, but we are running behind schedule. We hope to proceed this morning from the business of discovering hearing in young children to the point of what we do about it after we have found it. Our first essayist will be Jacqueline Keaster, who comes to us from the University of Iowa. Do not let that frighten you—she is trained to teach the deaf. She will speak on "Quantitative Tests for Young Children."

MISS KEASTER: May I first say on my own behalf that I am a teacher of the deaf. I do happen to be a member of a staff in a university, but it is a staff in an otological clinic. We see large numbers of both deaf and hard of hearing children every month. It is from that kind of experience that I want to talk with you this morning and tell you some of the ways that we have been trying to meet the problem of assessing the hearing of a young deaf child.

Quantitative Hearing Tests for Young Children

By JACQUELINE KEASTER

As has frequently been said, "the importance of the early ascertainment of hearing loss in young children cannot be overestimated," but no one with experience with young children would underestimate its difficulty. It is seldom if ever possible to do a pure tone audiometer test on a child under the age of 5. Occasionally we succeed in doing such a test on a four-year-old, but not very often. The reasons for failure to get reliable results with young children usually appear to be these:

1. The pure tones themselves are meaningless and uninteresting to the child.
2. He fails to understand just what the clinician wants him to do.
3. A test takes from 20 minutes to a half hour and he can't sit still that long.

Various techniques have been suggested to alleviate, to some extent at least, the problems involved in pure tone audiometry with children. One of the latest to receive considerable comment is the "Peep Show" reported by Dix and Hallpike of the Otological Research Unit of the National Hospital in London in the British Medical Journal for Nov. 8, 1947. This test apparatus consists of two parts, a wooden box with a picture at the back well suited to the taste of children. The picture can be seen through a viewing hatch and is lighted when a button is pushed. Above the viewing hatch is a signal light and a loud speaker. At first light and sound are presented together. The child is shown that if

when the light is seen and the sound is heard he presses the button, the picture will be illumined. After he learns the sequence the light stimulus is removed and the test begins. The first sound stimulus used is 1024 cps. at 80 db. above threshold. This test appears to make pure tone audiometry more interesting to the child, to put over to him just what response is wanted without the need of verbal explanation; and according to the authors the test can be satisfactorily completed in 10 to 15 minutes. Parenthetically I might add that a member of the Ear, Nose and Throat Department in the State University of Iowa Hospitals has just returned from England where he saw this test demonstrated with three children, one aged three, one four, and one five. He was enthusiastic about the way it worked with these three children.

When a child is referred to us who has no speech of his own and who does not respond to speech, and on whom we are not able to do a satisfactory pure tone test, we use a so-called Beat Frequency Oscillator which feeds pure tones of any frequency or intensity desired through a loud speaker into a sound proof room. If the child responds by hunting for the sound, by covering his ears, or even by crying, we know that he has some hearing. This is in no sense a quantitative test, any more than are tests done with such noise makers as bells, drums, and clappers.

The oscillator sometimes serves another purpose in being a wordless demonstration to a parent of a child's hearing problem.

In the last half dozen years considerable work has been done in investigating the use of speech hearing tests with adults. Donald Harris summarized the early findings in an article in the *Archives of Otolaryngology* in 1946 when he said, "for typical subjects and in cases where vocabulary is controlled, speech reception and pure tone audiometry tests are intimately connected and are concerned with measuring the same thing."

These findings seemed to point to a possible means of assessing the hearing of young children who have enough hearing to have developed speech understanding, providing that a test could be devised which would:

1. Appeal to children.
2. Require no verbal response on the part of the child.
3. Be short enough to hold the attention of even the youngest in the age group.
4. Use a standardized vocabulary.

Care must be taken when constructing such a test to be certain that it tests hearing rather than intelligence.

A list of 50 nouns was chosen from the first thousand words on the International Kindergarten Word List, a list comprising the spoken vocabularies of children of six years or younger. The words were chosen on the basis of two criteria: words in most common usage, and phonetic content. Pictures were then chosen to represent the 50 nouns. Next, the pictures were shown by a graduate assistant in a public school kindergarten and in a parochial school primary department to 75 children below the age of six. Out of the original 50 pictures, 25 elicited an immediate response from each of the 75 children tested. The resultant set of pictures is now being used for the basic vocabulary for the hearing test herein reported.

The next problem was to devise a set of directions to be followed by the child that would be interesting to him, that would be within his vocabulary range and would not tax his memory span. Articles of furniture in the testing room, plus the pictures, were used to work out the directions.

To administer the test, a controlled speech amplification system is used with two adjoining rooms. In one is the speech amplifier and talk-back system. The second is sound-proofed for speech reception and is equipped with a fifteen-inch Jensen coaxial loud speaker with a bass reflex baffle. The child and the observer occupy the sound-proofed room. The pictures are placed on a kindergarten easel where the child has easy access to them from his seat on a stool in front of the

easel six feet from the loud speaker. The child is first asked to name each of the pictures to make sure that none confuse him. He is then told that in a moment he will hear a lady's voice coming from the 'radio' say something like this: 'Put the *baby* on the floor.' At first the child may need to have the action demonstrated by watching the observer carry out such instructions as: 'Put the *train* on the stool,' 'Give mother the *horse*,' etc. If the child appears to understand, the technician in the adjoining room begins the test. The speech amplifier used is a high fidelity system with a sound-level meter to enable the technician to control the intensity of his voice. An output attenuator enables the speech intensity level to be varied in two decibel steps over an 85-decibel range. The child listening is told that the voice will be loud at first but will become softer and softer. Following are the directions that he hears:

1. Put the *rabbit* on the floor.
2. Point to the *boat*
3. Give the *pig* to mother.
4. Show the *bird* to the lady.
5. Put the *baby* on the chair.
6. Put the *spoon* on the window sill.
7. Point to the *car*.
8. Show the *bed* to mother.
9. Put the *cat* on the stool.
10. Give the lady the *ball*.
11. Point to the *house*.
12. Put the *shoe* on the window sill.
13. Put the *chair* on the floor.
14. Give mother the *dog*.
15. Point to the *corn*.
16. Show the lady the *squirrel*.
17. Put the *coat* on the chair.
18. Give the *cow* to the lady.
19. Point to the *train*.
20. Put the *knife* on the table.
21. Show mother the *fish*.
22. Point to the *airplane*.
23. Give the *chicken* to the lady.
24. Show the *apple* to mother.
25. Put the *horse* on the floor.

The lowest level at which the child is able to follow at least three directions is considered his speech threshold.

We have not attempted to use recorded speech with this test because of the need for considerable flexibility.

Scores on this test have been compared with speech reception tests requiring sentence repetition and with average pure tone losses for 512 through 2048 cps. A sufficient number of tests have not been given to allow for statistical processing of the scores; however, correlations appear to be high.

It might be rather interesting to cite a case with whom this test was used recently. A child 4.5 years old was referred to the Otolaryngology Department from the Department of Pediatrics of the State University of Iowa Hospitals. The referral sheet asked, 'Can this child hear?' The young patient had a spoken vocabulary of three words: 'Ma,' 'yeah' and 'no.' The physical findings were negative. The psychometric test revealed at least normal intelligence. The mother reported that the child followed verbal directions at a conversational level. That level, of course, can mean anything from a whisper to a shout. The pictures used in the test were placed on the desk in the office. The child responded by pointing to the picture representing each word spoken by the examiner. He was then taken to the sound-proof room where speech intensity could be measured. He responded to the directions, without error, down to a two-decibel level. Hearing loss as an etiological factor in this case was thereby eliminated.

The picture test is also used to check the reliability of pure tone tests given to young children. For example a very bright little 4½ year old girl was seen about three months ago. She had a uniform loss in hearing of 25 to 30 db., which seemed reasonable in view of the physical findings. Her speech threshold with the picture test was 24 db. Following these tests the child received medical treatment and returned one day this week for re-check. The pure tone test showed normal hearing through 2048 cps. It was down to about 10 at 4096 and 8192. The re-check on the speech audiometer also showed normal hearing.

In summary: We at the State University of Iowa are using pure tone audiometry

with children as young as can be worked with. We are sometimes surprised ourselves with the reliability of our results. The Peep Show sounds to us like a usable technique and one which may alleviate some of the major problems confronting anyone doing pure tone audiometry with young children. When testing an extremely young child who has no oral communication we use a beat frequency oscillator which feeds sounds at a desired frequency and intensity through a loud speaker into a sound proof room. And with children who have enough hearing to be able to identify single words we use a picture test, which test is also used as a check on the reliability of pure tone tests done on young children.

DR. SILVERMAN: We will proceed promptly to the next essayist, Mr. D. E. Morley, whom most of us had the pleasure of visiting yesterday afternoon at his quarters at the University of Michigan. He will speak on "Rationalism in Testing the Hearing of Children."

MR. MORLEY: In this paper you are going to hear me refer to two things which the preceding speaker has already mentioned. It reminds me of a little experience I once had when another man and I appeared on a program in Philadelphia. It seemed advisable, before we got started, to get together and compare notes. He said to me, "What are you going to cover in your talk?" I outlined very briefly what I was going to cover. He preceded me and when he got up to speak, he stole half of my thunder.

That did not happen here, but I am warning you in advance that there will be some repetition.

Rationalism in Testing the Hearing of Children

By D. E. MORLEY

The word "rationalism" used here in conection with testing the hearing of children is deliberate, for it is intended to commend the practice of guiding one's opinions and actions in the testing of children's hearing by what is considered reasonable. Such rationalism is conformable to a reasonable expectancy of children's responses, conformable to reasonable testing techniques and otological collaboration, and conformable to a reasonable interpretation of findings. Having indicated that these three considerations are determinants influencing the testing of children's hearing, let us examine them to discover what influence each will exert upon one's opinions and actions.

What sorts of responses to auditory stimuli can one reasonably expect from infants? Dr. Arnold Gesell of the Yale Clinic of Child Development says that it takes an infant about four weeks "to attain a working physiological adjustment to his postnatal environment."[1] By four weeks the behavior characteristics of the child have fallen into a pattern of genetic sequence. "The four week-old infant is heedful of sounds. If, while he is busy with postural activity, a hand bell is tinkled, the activity ceases. This is a significant pattern of behavior, a kind of auditory fixation or 'staring' at sound."[2] Pratt points out that even as early as the first few days of life, a majority of subjects who have been observed during that period respond in one manner or another to auditory stimuli.[3] Irwin[4], Pratt[5], Stubbs[6], and Weiss[7] report a wide variety of responses such as "changes in respiration, jerking movements, blinking, turning of the eyes, cessation of crying, increased bodily activity in response to loud sounds, and some times a decrease in bodily movement in response to sounds of moderate intensity, as contrasted with silence or very faint sounds."[8] At 16 weeks a period of rapid cortical organization has begun. This is particularly noticeable "in the coordination of ocular and manual reactions."[9] The 16-week-old infant "may turn his head on hearing a familiar sound. But even more significantly, he pays heed to the human voice."[10] The 40-week-old infant "tends to imitate gestures, facial expressions, and sounds. He shows responsiveness to his own name. . . . .Even though he is quite unequal to true comprehension of word

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meanings, he manifests a socialized responsiveness which will immediately lead to speech."[11] The one-year-old infant "listens with new intentness to words; he repeats accustomed words under the stress of repetition and imitation."[12] From the observations of these and other investigators of child development, it is reasonable to expect, then, that during the first year of life of the average infant, definite and clear-cut responses to auditory stimuli can be elicited from even the very young. As in the total picture of a child's development there is an emergence of refinement, so, too, in connection with hearing, responses are made first to gross sounds and progress to reaction and recognition of more specific stimuli.

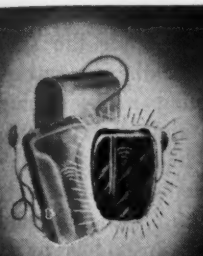
Going beyond the first year of infancy into early childhood, other factors are to be considered as influences in the testing of children's hearing. Attention span is one of these. Jersild[13] has shown that "in his spontaneous play the pre-school child usually gives only a short time at a stretch to any particular activity. This relative brevity of his attention span will influence his reaction to any particular activity." Bott[14] found that the average duration of uninterrupted play on a particular project was 2.5 minutes at the age of two, 4.7 minutes at the age of three, and 5.6 minutes at the age of four. Attention span has been referred to as "duration of attention," "interest span," "occupation span," and "persistence." In whatever way it is designated, in the young child this "staying power" tends to be quite brief, but does increase from year to year. It has also been noted that the length of time children persist in a performance varies under different conditions of motivation. The average attention time given an activity will be longer when praise is given for effort than when there is no special incentive. In a competitive situation the attention time is even longer than in either the unmotivated or praised efforts.

The reaction time of children is another of these influences. An indication of increases in speed with age in motor responses in a test of the speed with which the individual can execute a voluntary motor response on hearing a sound is shown by Goodenough.[15] Beginning at the age of 3½ and going through 11½ years, she has shown that the reaction time of the 3½ year-old is slower than that of the 4½ year-old. The reaction time of the 4½ year-old is slower than that of the 5½ year-old, and so on up through 11½ years.

The mental abilities of children constitute another pertinent influence area. The child's ability "to act in accordance with the demands of the situation which confronts him, to comprehend the situation and solve the problem it involves, to learn, to apply past learnings, and to perform acts that are useful in meeting the practical situation in hand"[16] is of considerable significance affecting one's reasonable expectancy of the child's responses.

One could go on to include other factors such as the child's development of social behavior, his emotional status, his growth of understanding, his interests, and his problems of adjustment. Surely these, too, could be expected to be influences affecting one's reasonable expectancy of children's responses. First then, in testing the hearing of children, the examiner must be cognizant of what constitutes the nature of children's normal responses to auditory stimuli during the first year; he must appreciate the importance of a relatively short attention span in children; he should expect a *longer reaction time* from the younger children; and he will need to take into consideration variations of the mental abilities of children.

The second consideration in rationalism in testing is the application of reasonable testing techniques and otological collaboration. Obviously the techniques used should take into consideration the influencing factors already mentioned. In the armamentarium of sound sources used in testing we find that whistles, bells, horns, tuning forks, pure tone generating devices, records, spoken voice, and voice delivered through a microphone-amplifier-loudspeaker unit have been or are still being used.



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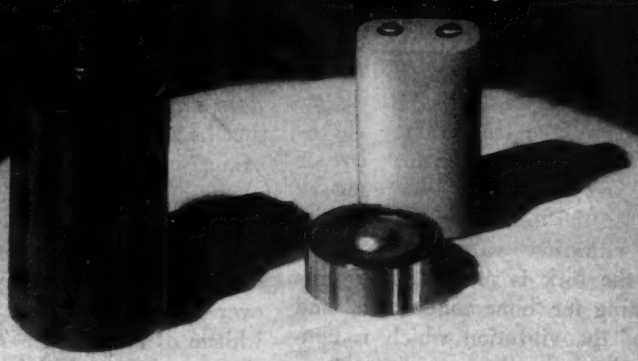

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In 1935 E. F. Rau of Moscow, Russia[17] described the testing of one to three-month-old infants with a shrill bell. The bell is rung near the child unexpectedly and from a position in which he cannot see the bell or the hand. A hearing child, if he is asleep, awakes and cries; if he is awake, he is either frightened and shudders or shows a general tenseness and gasping. The deaf child shows no change in his condition.

John D. Wright of the Wright Oral School in New York City points out the difficulties encountered in using tuning forks in testing the hearing of children of two or even three years of age. "It is very difficult to verify the truth of the child's indications that he hears the fork by air conduction, and when he is so young he does not grasp the distinction between the mechanical vibration which he certainly feels when the fork is placed against his head, in testing for 'bone conduction,' and the *effect* of the vibration which is conveyed to his brain by the hearing mechanism and there translated into what we call 'hearing'. . . . . He may only feel the physical vibration and would make the same response if the fork were placed against his knee or his knuckles."[18] Wright contends that an accurate determination of the degree of hearing of a child cannot be made when he is only three but that the parents can, with patience, arrive at a considerable knowledge in the matter by determining whether he can hear voice at distances from five to ten feet, being careful that all other ways by which the child's attention might be attracted are eliminated.

Guilder and Hopkins[19] suggest a procedure to develop more accurate hearing responses in children. The child is first *taught to listen;* he then *learns to give a quick, accurate response to sound;* and finally he *learns to discriminate between gross sounds of different frequencies.* They suggest the use of toy animals which make noise, toy motor horns, whistles, a dinner bell, a bicycle bell, and a cow bell as sound sources. The child is taught to signal awareness of sound by the use of a small flashlight which he turns on each time the sound is heard. Later the skill developed in recognizing, discriminating, and responding is applied in his being tested with a pure tone audiometer. Such a procedure is useful in preparing any young child for a hearing examination, and it is particularly useful with the child who, because of hearing loss, has never become sound conscious and who has no concept of sound.

Bloomer[20] has described a simple method of testing the hearing of small children which has been used effectively with 3 to 6 year-olds. Pictures of sound-making objects are shown to the child. He is told that he is going to hear the bird sing, for example, or the train whistle. The earphone of the pure tone audiometer is held to his ear and he is allowed to hear a tone appropriate to the object. The child is told he can stop the sound by putting his finger over the mouth of the bird or over the whistle of the engine. This constitutes the signal to be watched for by the tester.

Dix and Hallpike have more recently devised a peep-show pure tone testing apparatus at the Aural Department and Otological Unit of the National Hospital, London, England.[21] Sound impulses from an audiometer are synchronized with a light which illuminates pictures of a peep-show. The synchronization of sound and light condition the child to signal when sound is heard.

In testing young children between the ages of four and eight, Westlake[22] has shown that there is considerable reliability of children of those ages to an audiometric test.

In more recent years, investigators such as Hughson and Thompson, Carhart, Harris, and Keaster have shown that speech reception testing is a valid technique when used alone or as a concomitant of pure tone testing. Hughson and Thompson maintain that "the relation between audiometric percentage loss and the impairment in speech reception is definite and specific."[23] Carhart says "the speech reception test can be used alone to obtain a

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rapid estimate of hearing loss. . . . .Speech reception tests yield measurements comparable in meaningfulness to pure tone averages."[24] Harris says, "For typical subjects and in cases where vocabulary is controlled, speech reception and pure tone audiometric tests are intimately connected and concerned with measuring the same auditory function."[25] Keaster has been doing speech reception testing of 3-6 year-old children using picture cards and attenuated speech reception equipment. Speaking through the equipment, the operator asks the child to point out the pictures named, or the child is asked to hand the card to the assistant or mother who is with the child.[26]

These techniques vary in the amount of information to be derived from them concerning the extent of the child's hearing loss. With some, only a gross evaluation can be expected. With others rather specific data can be secured regarding acuity for specific sound frequencies. With all of them competent otological collaboration is required.

At the University of Michigan Speech Clinic our Hearing Division provides hearing testing service for children. We have on our staff an otologist assigned to us from the Otological Department of the University Hospital. In addition, we frequently have children referred to us directly from the University Hospital for acoustic evaluation. The children generally seen are between the ages of two and ten years.

In making an evaluation of the hearing of these children we collect our data from the otological findings, history as related by the parents, and various forms of acoustic examinations. Not infrequently we have to see the very young children more than once. As the children become accustomed to coming to the Clinic and as they learn more of what is expected of them in making responses, we find that we can arrive at a rather satisfactory estimate of the extent of the hearing loss. Beginning with the tests using gross sounds, amplified and unamplified voice, and working up to speech reception tests with and without headphones, we arrive finally at the audiometric examination. In this way, over a period of more than one visit, the hearing acuity can be ascertained rather well. With children who are older, we can usually get excellent cooperation using the speech reception-picture identification technique first and then going to the pure tone audiometer. Recently we completed hearing screening tests of thirty nursery school children between the ages of three and four using the speech reception circuit of the ADC audiometer. Prior to the screening, several children with known normal hearing were given tests to determine the efficacy of the technique. The child to be tested was seated at a small table on which were several familiar pictures which were to be pointed to. Two or three other children observed him while waiting their turns. Before putting the headphones on the child to be tested, the examiner asked him to point to the various pictures as requested. Then the headphones were put on, and the examiner, out of visual range of the child, asked him to point to certain pictures as before, with the output of the machine attenuated to very low intensity. This procedure was followed in the screening tests of the nursery school children. Three of the thirty children were screened out. In two of these cases, subsequent medical examination showed tonsil and adenoid conditions, and in the third case a clear case of middle ear involvement was seen.

"Reasonable" testing techniques must conform to known criteria of children's responses. In making an evaluation of the hearing acuity of very young children, the examiner's methods must take into account responses which can be expected to be gross. As the child matures, he can be taught to recognize and discriminate, and the examiner will be able to get a more accurate estimate of the child's acuity. But if the examiner attempts to use testing techniques beyond the reach of the child's abilities, the techniques are "unreasonable" and results are inaccurate.

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ings? In this stage three basic information sources must be utilized. First, the medical report concerning medical history and the results of the physical examination; second the outcome of the acoustic examination; and third, the information provided by the parents, teachers, or friends of the child. From the medical report is obtained information concerning the past and present physical state of the child as related to his hearing. From the results of *suitable* hearing tests is obtained information regarding the child's current responses, gross or specific, depending on his response capacities. From the parents, teachers, or friends is obtained information regarding the child's responses in daily hearing situations and any changes which may have been observed.

With one group of children the medical examination, the acoustic examination, and the conference with those in close association with the child will point to a handicapping loss which is rather clearly the result of current or past damage to the conductive parts of the child's hearing mechanism. An interpretation of conductive type loss is made. With another group the medical examination may be essentially negative but the medical history points to trauma or infection which could have affected the nerve elements of the hearing apparatus. The acoustic examination shows rather extensive loss. The parents report delayed or interrupted speech development and either no observable reactions to sound stimuli or a cessation of reactions following an illness. In such cases an interpretation of a nerve type loss is usually reasonable. A third group may present a mixture of both the conductive and nerve involvement and can be classified as mixed type loss.

To be a reasonable interpretation of findings, that interpretation must take into account the child's developmental capacity for making responses to auditory stimuli, his ability to maintain satisfactory attention during the testing, the reliability and speed of reaction in the testing situation. That interpretation must also take into account the suitability of the testing technique used and whether the results obtained are to be regarded as a gross evaluation or an indication of rather specific thresholds for particular frequencies. In addition, the duration of the loss as learned from the medical and interview histories needs to be considered. Having taken these influences into account, the examiner will be more likely to arrive at a reasonable interpretation of his findings and will be using rationalism in his testing.

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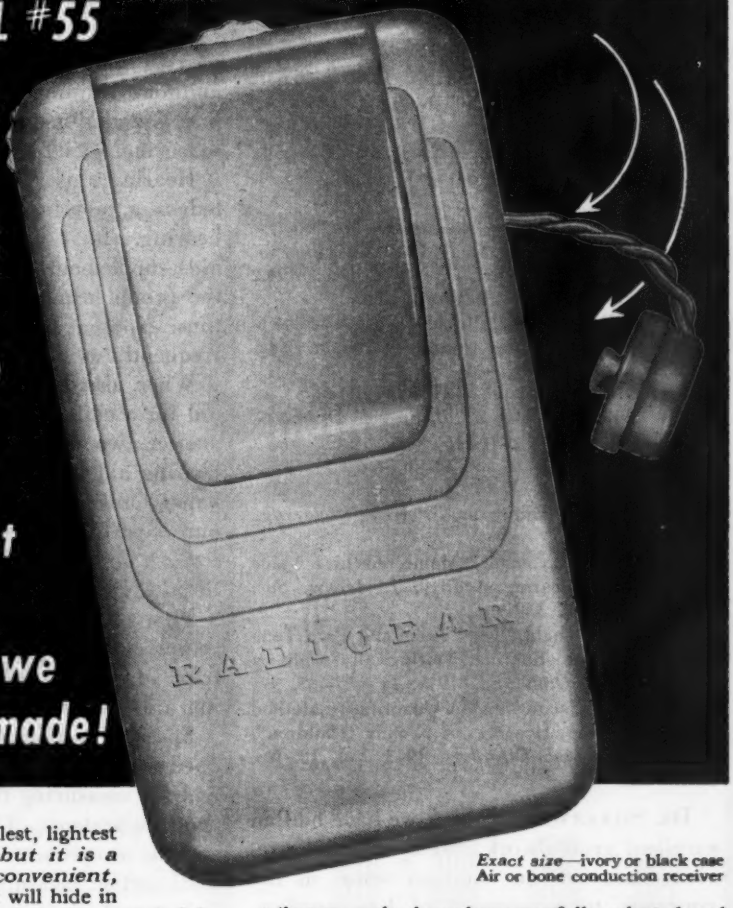

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DR. SILVERMAN: I think we have had an excellent groundwork laid by the two previous essayists on common sense in the approach to assessment of hearing loss. The next essayist is Miss Margaret Soissons, of Central Institute, who has worked conjointly with Miss Olson, of our staff. They were confronted with the problem of taking the next step of doing something about this situation. In this case the children presented to us were children from the Illinois School for the Deaf. They came to be worked up and considered for the use of hearing aids.

Miss Soissons, who will read the paper, will tell you something of her experience in trying to fit hearing aids—and I will put "fit" in quotation marks—on these children from the Illinois School for the Deaf.

Problems in the Selection of Hearing Aids for Children

FLORENCE OLSON and MARGARET SOISSONS

It is reasonable to expect that "to the degree that his residual hearing allows, auditory training helps the child build a firm foundation for his future adjustments in normal social situations."*

Hearing aids are more and more accepted as a tool for the training of residual hearing. It is our belief that individual aids supplement advantageously the use of the group hearing aids, since the child is thus exposed to auditory stimulation as frequently as possible.

When asked to select a suitable hearing aid for a child, the hearing aid clinic must answer two question: "Should he have a hearing aid, and, if so, which one?" This paper conveys some general observations of our experience in selecting hearing aids for 34 children from the Illinois School for the Deaf in Jacksonville.

First of all, we wish to discuss the development of speech reception tests and their adaptation for the evaluation of hearing aids for children.

Speech reception tests have been developed for the purpose of measuring hearing and for measuring the efficiency of electro-acoustic systems. The advantage of using speech reception tests in addition to the audiometric measurement is obvious since it is speech we expect the hearing aid user ultimately to appreciate through the aid.

Speech Reception Tests

Speech reception tests have been developed to give us two different types of information, the threshold of hearing and discrimination. The threshold test of hearing is a measure of auditory acuity. It tells how loud or how soft speech must be to be understood. Material for this test may include words, sentences or numbers. An example of a threshold test is the Harvard No. 9 list of spondee or two-syllable words, equally accented. Words are given

*Hearing and Deafness: A Guide for Laymen. Davis, H. et al. New York: Murray Hill Books, Inc., 1947. Page 282.

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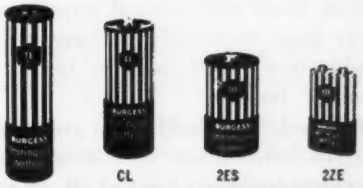

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at a loud level first, "baseball," "armchair," then softer "mousetrap," "sunset," and softer until they can no longer be heard. The threshold of hearing for speech is that intensity at which the listener hears only 50 per cent of the spoken material. The threshold tests involve some discrimination but are built in such a way that they will measure chiefly acuity.

Discrimination tests for adults have been in use for some time. The Harvard PB lists of 50 words each include a broad sampling of English speech phonetically balanced (the PB stands for "Phonetically Balanced.") They include all of the phonetic content of average English speech. In such a test the listener is asked to discriminate between a word like "pawn"—pawn your watch and "pond" where the ducks swim. The word "coast" becomes "coat" when the "s" sound is not heard. For children words like fish, dish, ball and doll are used. The tests are designed to tell us how well one can hear at threshold or at intensities above the threshold level.

So far in our work with children we have concerned ourselves with speech tests for the objective measurement of *threshold*. The discrimination tests we have been giving are standardized and have evolved from our clinical experience. It is our hope eventually to have a battery of objective discrimination tests to use whenever feasible.

If Speech Threshold Tests are to give us accurate information, they must have certain characteristics. First of all, all vocabulary and language material should be *familiar* to the listener. By familiarity we mean that the listener is able to identify in some way speech patterns which he recognizes through his ear alone.

The various items within a threshold test must be easily and wherever possible equally audible. Some words are more difficult to hear than others. "Thin" is much more difficult to hear than "boat" or "cow." Careful selection of words can insure equal audibility of the test items.

The test items for a threshold test should also be phonetically dissimilar. Asking a listener to discriminate between words of unusual similarity would make the test extremely difficult and would not add to its value as an effective test.

In adapting speech tests for use with children, another criterion was added. All words should be clearly illustrated pictorially so that the child can point to the picture named by the word he hears. We believe this procedure to be familiar to most children and it obviates the need for speech or writing on the part of the subject.

For our purpose traditional threshold tests were modified in two ways. A group of spondaic words was selected to provide a threshold test similar to the one developed by Psycho-Acoustic Laboratory at Harvard. Spondaic words which have equal accent on each of two syllables are found to have uniformly high audibility. They are all relatively easy to hear, therefore they satisfy the requirement of equal audibility. We used such words as baseball, bedroom, hot dog, etc.

We prepared a list of 24 spondaic words. The words were within third grade vocabulary level and were all plainly illustrated on 4″ x 6″ cards.

It seemed necessary to have another test for children of lower vocabulary level. We decided to use monosyllables which again could be plainly illustrated. All of these words are nouns and are on kindergarten vocabulary level. Equivalence of audibility was somewhat taken care of by having six normally-hearing adults listen to a long list of such words and by eliminating those words which seemed very easy or very hard to hear. We thus managed to develop a list of 24 words.

Our laboratory was also provided with recordings of the Western Electric number test which has been developed for use with the Western Electric 4C Audiometer.

Ordinarily before beginning the hearing aid selection an audiogram is made. We were in this case provided with audiograms by the Illinois School for the Deaf.

Each child's familiarity with the test material was established by going through

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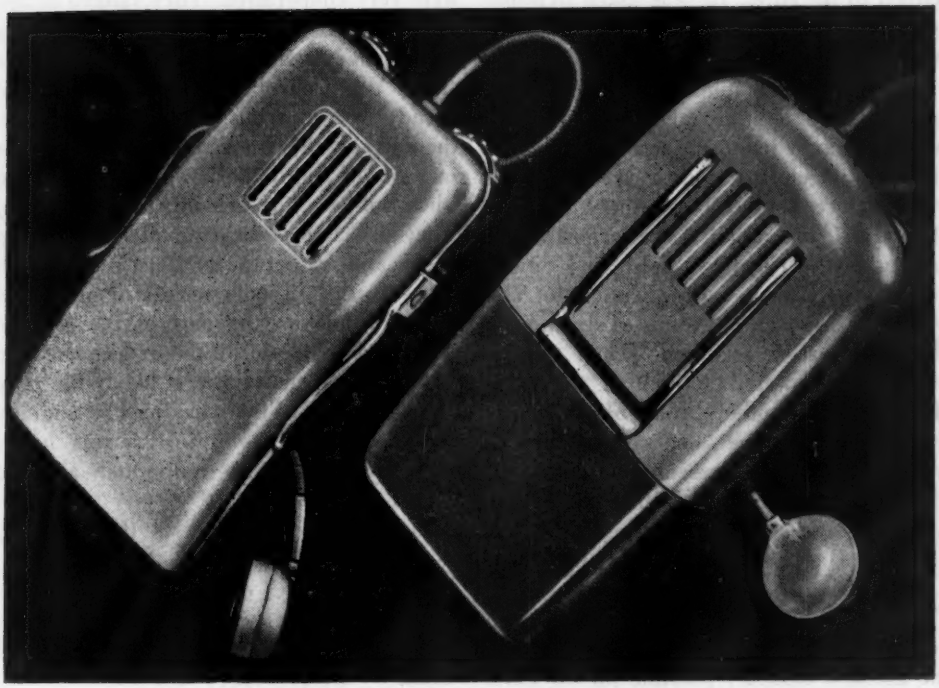

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the lists with him and only familiar words were used. The child was then seated in a test room. A picture rack was placed in front of him on which we put the selected pictures. These were usually seven or eight in number. The procedure was explained to the child. He was asked to point to the correct picture whenever he heard the word which identified it.

The words were spoken by the clinician into a microphone in the control room and were carried into the test room over a high fidelity electro-acoustic system which will produce as much as ninety decibels of undistorted output. The acoustic apparatus is described by Walsh and Silverman in The Laryngoscope, Sept. 1946. The words were spoken in groups of six and the child's responses recorded. Then the intensity was lowered and either the same six words or another group of six words were spoken. If the same group of words was used, they were presented in a different order. The intensity at which the subject was able to identify half of the words was designated as his threshold for speech.

Then a hearing aid was put on the child. The instrument was adjusted and the gain control set at Maximum Usable Gain or the greatest intensity possible for the child to take without feedback or squeal. The procedure described above was repeated and the gain above the hearing threshold for speech was recorded. The highest gain for any one child was found to be 50 decibels; the smallest gain, 20 decibels; and the average gain 35 decibels. Twenty-four out of 30 children had a gain of 30 decibels or more.

Various hearing aids were tried and after each trial the child was asked to express an opinion of the hearing aid in question. We wanted to know which instrument he liked the best. These subjective evaluations were also recorded and it was interesting to note that of 15 children expressing a definite preference 9 preferred the instrument giving them the greatest amount of gain.

Instruments were finally recommended on the basis of threshold score, child preference and the requirements of the child as they concerned battery power and size of instrument.

The whole procedure was an enlightening one for us because it pointed the way for improving our technique. The children were very cooperative. They ranged in age from 5 to 19 years, and there was also a wide range in their auditory comprehension. Yet each child was psychologically "ready" for hearing aid ownership. On the average, the children had had two years or more of auditory training and thus were ideal subjects for hearing aid evaluation. They felt that a hearing aid would help them and came to us anticipating with pleasure the ultimate results of our work. This attitude on the part of the children made it possible to do the experimentation with new test materials. It also pointed up the advantage of their having had auditory experiences on group instruments before the selection of an individual aid was made.

Our experience suggests the following generalizations:

1. Reasonably objective measurements can be made of hearing aid performance in transmitting speech to many young children.

2. The success of such procedures depends upon the development of a variety of tests suitable for children of various amounts of auditory experience.

3. The success of such procedures depends also upon the flexibility and versatility of the clinician and her ability to adapt test materials to each child without sacrificing objectivity. When a child knows only five or six words, these will have to be used. When he is familiar with the auditory patterns of twenty or thirty words we should be able to establish that fact in a minimum amount of time. We should also know the acoustic characteristics of at least some of this vocabulary and we should have pictorial illustrations at hand.

We wish to emphasize that the procedures which have been described here are experimental. We consider the results of the experimental work satisfactory enough

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Before I close I wish to thank the authorities and the children of the Illinois School for the Deaf for their excellent cooperation.

DR. SILVERMAN: Since we want to complete the meeting on schedule. I shall now promptly turn it over to Dr. Hudgins, who needs no introduction to this group. When Miss Soissons mentioned the Phonetic Acoustic Laboratories developing the spondaic tests, she could just as well have said Dr. Hudgins, because he played a major role in their developement. Dr. Hudgins.

A Rationale for Acoustic Training

By C. V. HUDGINS

It is my purpose to survey the problem of acoustic training generally. I shall discuss, first, some of the physiological and psychological aspects of the problem of deafness and, second, the possibilities for achievements in the acoustic training program. Later we shall hear something of the methods of acoustic training that have proved successful in the hands of experienced teachers.

The science of electronics has placed in our hands powerful tools in the form of hearing aids. It is possible today to build hearing aids that will bring high fidelity speech sounds to an ear regardless of the degree of its impairment, provided that there remains even the slightest remnant of the hearing function. This means that pupils who only a few years ago were considered quite beyond the reach of sound for practical purposes may now be considered as candidates for the acoustic training program. It should be pointed out, however, that while technical improvement in hearing aids has provided better tools, it has at the same time made greater demands of us. It is essential, for instance, that we have as thorough an understanding as possible of the physiological and psychological aspects of hearing impairment, and that we understand the limitations for acoustic training imposed by the various types and degrees of hearing loss. Furthermore, it is essential that we have some technical knowledge concerning the instruments themselves. There is a considerable body of facts already available with regard to deafness. There are, at the same time, many things that we should like to know and which will have to await further invesitgation and experience.

Psycho-Physiological Aspects of Deafness

Let us first consider the physiological and psychological aspects of our problem. A good place to start will be the consideration of the concept of threshold. It is customary to define threshold in terms of the intensity of the physical stimulus necessary to arouse a sensation, or a response. In the case of the ear, the physical stimulus is sound pressure. Sound pressures may be weak, of low intensity, or strong, of high intensity. Sound intensity is commonly measured in terms of physical pressure units and expressed in decibels.

We speak of a deafened ear as having an elevated threshold. By this we mean that in order to reach the threshold of a deafened ear, we need a sound of greater intensity than that required to reach the threshold of a normal ear. We measure the degree of hearing loss, therefore, in terms of the difference between the two intensities. The familiar audiogram is a plot showing the hearing losses for pure tones over a broad range of audible frequencies. It is possible and often helpful to measure auditory thresholds using speech as the stimulus. This gives us a single intensity measure rather than the series of measurements obtained in a pure tone audiogram.

In considering the problem of acoustic training we are interested in three types of auditory thresholds: (1) The sensitivity threshold, or the *threshold of detectability*. This threshold is measured in terms of the intensity of the least audible sound. It may be determined for speech sounds or for

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pure tones. When speech sounds are employed we are interested in determining the level at which speech is just audible as sound. Since the vowels in speech carry the greater energy, the threshold of detectability for speech is usually determined by the frequencies from 600 to 1000 cps.

(2) A second threshold that interests us in the discussion of acoustic training is the *threshold of tolerability*. This is measured by the intensity of sound as it becomes uncomfortably loud. Intensities above this level begin to be painful. This threshold may be measured either by means of speech sounds or by pure tones. Again, the vowel frequencies will be the first to reach the threshold of tolerability.

(3) The third threshold with which we are concerned is the *threshold of speech perception*. In the normal ear this lies above the threshold of detectability by something like 10 db. It is measured in terms of the intensity of speech that is just intelligible. Obviously, the threshold of speech perception can be accurately determined only in persons who have a normal hearing vocabulary. It is logical to assume, however, that in the case of our untrained pupils a theoretical threshold of speech perception exists and that its level, relative to the threshold of detectability, approximates that of the trained ear.

It is convenient in discussing the physiology of hearing to include another concept, namely the "useful auditory area." This is the region (really a range of intensity) that lies between the thresholds of speech perception and tolerability. It is the region below which speech is mere sound and above which speech is uncomfortably loud or painful. The "useful auditory area," therefore, constitutes the region of the ear in which speech is perceptible and toward which our acoustic training efforts must be directed. In a normal ear this region encompasses a speech intensity range of something like 100 to 110 db. For the deafened ear, on the other hand, the "useful auditory area" is restricted to a degree that is determined by the extent of the hearing loss.

The threshold of tolerability for the deafened ear is relatively the same as that for normal ears. It is the threshold of detectability, and hence the threshold of speech perception, that are elevated. Thus a uniform hearing loss of 50 db implies that the threshold of detectability is elevated by a matter of 50 db, and that the "useful auditory area" is reduced by a similar amount. Losses of greater degree further restrict the useful auditory area. In extreme cases the restriction is so severe that speech that reaches the threshold of perceptibility may at the same time actually approach the threshold of tolerability. A hearing loss of 90 db, for instance, leaves a "useful auditory area" of some 20 or 30 db with the likelihood that the area is still further restricted in the higher frequencies. Acoustic training is possible with these pupils, provided that the hearing aid has a sufficient power output and at the same time is capable of setting an upper limit that prevents the more intense peaks of speech from reaching the threshold of pain.

The above discussion clarifies some of the problems with regard to acoustic training. For pupils whose hearing losses do not exceed 60 or 70 db the problem is relatively simple. Speech sounds can be amplified to a level well above that required for speech perception without the danger of reaching the threshold of tolerability. For the more severely deaf pupils, however, the problem is more complicated. A special design of hearing aid is required for these pupils, one that provides adequate amplification without distortion due to overloading, and, at the same time, provides a device for limiting the higher peaks of speech in order to protect the ear against painful stimulation. The problem therefore, is one of "packaging speech," of keeping high-level speech within a narrow intensity range without severely distorting it. Methods of limiting maximal intensities, electronically, are available but are not generally employed at present in group hearing aids. The maximum intensities may be limited by means of peak-

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clipping, a device which sets a barrier above which the peak intensities may not rise; or limiting may be effected by means of compression amplification, a form of automatic volume control which can be set at any desired level. The latter method is practically distortionless in its operation.

In the practical classroom situation optimal operation of group hearing aids is often restricted by the phenomenon of acoustic feedback. Leakage of sound energy around the earphone reaches the microphone and generates an oscillating tone or "squeal." This phenomenon sets a practical limit to the amount of amplification that may be used and effectively reduces the usefulness of the instrument. There are several ways in which it may be partly overcome. Basically the problem is one of preventing the leakage of sound energy around the earphone. This may be achieved by equipping the earphones with rubber cushions that fit snugly around the ears. A second method consists of having individually fitted earmolds and the employment of minature earphones. Sound treatment of the walls of the room is also helpful in the solution of this problem.

The Possibilities for Acoustic Training

We may consider the possibilities for acoustic training from two different points of view. First, there is the possibility of restoring the hearing function to persons who have become deaf after having acquired speech and language. The second possibility is that of training congenitally deaf children to utilize their remnant of hearing to a maximal degree. The deafened adult has an auditory memory for speech that is usually intact. The basic needs, therefore, can be met by adequate hearing aids plus the essential training in their use. The problem is one of rehabilitation or restoration of the hearing function. This aspect of the problem will be discussed later in the program.

The congenitally deaf child presents the problem of establishing the hearing function which can only be potentially present, rather than restoring it. The acoustic training program for these children starts with a blank page, so to speak. They may have experienced the sensation of sound and may even be able to make rudimentary discriminations between gross sounds. As a rule, however, perceptual understanding of speech is lacking. A miraculous and complete restoration of hearing would still leave these children totally unable to understand speech, except after a long training period. A prolonged period of training is therefore necessary in order that the remnant of hearing may be employed in their general education.

Achievements in Acoustic Training

As a rule pupils enter schools for the deaf without speech, language, or speech perception. The primary task of the teacher is that of establishing these skills as rapidly and as effectively as possible in order that they may be utilized in a general educational program. The employment of every sensory avenue is essential in this task. The hearing aid has become an effective tool in this process. Better speech, better language development, better lipreading (speech perception), and a richer educational experience generally result from the maximal utilization of both hearing and vision.

Some pupils learn to understand speech by ear alone by means of acoustic training. Others with greater hearing impairment achieve an excellent speech perception ability by supplementing visual with auditory perception. Both groups acquire better speech habits and derive greater benefits from the general school curriculum. As a rule, the acoustic training they have received enables them to continue to use their hearing by means of individual hearing aids after leaving school.

A third group with very severe hearing losses (above 80 or 90 db) also derive very real benefits from the acoustic training program. As a rule, few members of this group participate in the program because the relatively few hearing aids available in most schools are reserved for those who are expected to derive greater benefits from them. It is also true that the profoundly deaf pupil is generally considered

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to be beyond the reach of acoustic stimuli for any practical purposes. There is a definite trend at present, however, to extend to an increasing degree the advantages of the acoustic training program to profoundly deaf pupils.

Potentialities

This brings me to the question of potentialities for acoustic training. No one questions the benefits of acoustic training for pupils who have minor or less severe hearing losses. In the past, the most spectacular results have been achieved with pupils whose losses were not greater than 70 or 80 db. Results with the more profoundly deaf have been seemingly less spectacular and the returns for efforts expended have been less apparent. One of the difficulties with regard to this group has been the problem of evaluating the benefits. The advent of more powerful hearing aids has made it possible to bring speech to the most profoundly deaf ear. We should hesitate, therefore, to set an arbitrary limit and say that pupils whose losses fall above this limit should be excluded from the acoustic training program.

We cannot predict at present what degree of success we may expect by extending the program to the more profoundly deaf groups in our schools. Their greatly restricted "useful auditory area" increases the difficulty of the problem. Furthermore, our efforts may be restricted by the relatively poor quality of the remnant of hearing of these pupils. We do know, however, that sound-amplifying equipment is available for exploring these questions. We are able to give them speech at a level above the theoretical threshold of speech perception, while at the same time restricting the maximal peaks to a level below the threshold of pain. Research programs designed to explore these problems are already in progress.

It is my present opinion that favorable results are to be expected from such a program. It has long been common knowledge that speech development is favored by the employment of hearing aids with this profoundly deaf group. While the finer discriminations for consonants may be impossible, the more obvious vowel differences may be discriminated. Furthermore, the rhythmic patterns formed by the grouping and accentuation of syllables are perceptible. The use of adequate hearing aids therefore aids materially in the development of a fluent, rhythmic speech. Finally, speech perception involving both eye and ear is definitely improved. These factors alone add immeasurably to the quality of education for the deaf.

Acoustic training is not designed to replace the long established methods of teaching the deaf. It is not a short cut to success in this matter. It does, however, provide a powerful addition to the teacher's bag of tricks. The hearing aid becomes an essential fixture in the classroom in the same sense that good lighting is essential for lipreading. Its employment will become an integral part of the educational procedures.

DR. HUDGINS: I should now like to introduce Dr. Di Carlo, of the University of Syracuse.

Auditory Training for the Adult

By LOUIS M. DI CARLO

Auditory training for the adult with impaired hearing is not new. Macfarlan,[4] Vuillemey,[7] and others reveal that interest in this topic existed as early as the first century A.D. In recent years, especially since the work of the Army[1] and Navy[5] rehabilitation programs, much attention has been directed to this problem of training residual hearing. Goodfellow[3] and Silverman,[6] evaluated auditory training experimentally, and Silverman[6] reported progress even after individuals had worn hearing aids for some time.

It has long been recognized that many individuals who are commonly labeled as "deaf" nevertheless generally have some remnants of hearing, which through a program of auditory training, they can use in making a more adequate adjustment to an auditory world. Similarly, hard of hearing persons who are known to have con-

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siderable hearing have rarely been provided with auditory training designed to help them make the most effective use of it.

Hearing loss in adulthood often precipitates an adjustment crisis. The stress hearing loss creates for the personality may drive the individual to reject a hearing aid and thus betray attitudinal and emotional maladjustment. An adequate program of auditory training administered early may prove instrumental in circumventing such behavior. Furthermore, such a program of training embraces the principal objective of structuring the situational factors so that the individual will acquire an insight into his basic problems. Another prerequisite of such a program expedites and facilitates "coupling" with the sound world through means of a satisfactory hearing aid.[7] Dr. Ramsdell[2] has carefully analyzed differential behavior responses that loss of "coupling" may precipitate.

Dr. Hudgins has just discussed three fundamental concepts: the thresholds of (1) detectability, (2) speech perception, and (3) tolerance. These must enter into any discussion of auditory training, since the objective of such training aims at a complete utilization, and if possible a broadening, of what he has designated as the *useful* auditory remnant.

The hearing impaired adult comes to auditory training with developed conceptual equipment. For him, auditory training does not mean further development, but rather it means efficient restoration of his hearing interactions to permit satisfactory personal and social adjustment.

Hearing is not a physiological experience alone. For man who uses intelligence hearing is a function of his environmental setting, modified by memory and reflex activity. With the hearing impaired adult this concept creates a dual problem. In the first place the individual with the depressed and distorted hearing becomes conditioned to a state of tension brought about by a perceptual reduction in refinements of meaning. Without amplification his phonetic analysis is impaired. Depending on the nature of his hearing loss his memory for sound phenomena may become impaired. His mode of responses may take on forms of depression, antagonism, withdrawal. The modification of these responses is a major problem in auditory training.

In the second place, although amplification of sounds is provided by the hearing aid, the old attitudes and response patterns to auditory stimuli persist. Auditory training attacks these through training in situational adjustments, phonetic interpretation, adequate auditory response.

Auditory training must teach the adult to make maximum use of his residual hearing. He must combine with this all forms of assistance within the periphery of his experiences. This means that auditory training should help restore efficient synthesis of his hearing, his memory, his anticipation of the requirements of situations; develop his vision, adjust him to the acquisition of meaning from reduced clues, and increase his knowledge of probable situational behavior.

In constructing a program of auditory training the specific needs of the adult should give direction to the plan. There are several possible methods that may be employed:

First, the Psycho-physical: This approach would help the individual correlate variations in the physical properties of sound with perceptive experiences.

Second, Phonetic: This program involves helping the individual to perceive and interpret acoustic differences between speech sounds, isolated, and in word combinations.

Third, Situational: The emphasis on this approach involves the interpretation of auditory stimuli with reference to daily life experiences. The exposure of a hearing handicapped adult to all manner of pleasant and natural auditory stimuli marks the first step to development of sound consciousness. The adult learns to listen to sound as natural phenomena. The next step in training deals with sound as part of a larger whole in which the sounds themselves become intermediary and referential in character. Here the adult learns

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to attribute meaningful values to all auditory stimuli. The refinement of the listening process continues as the individual is trained to discriminate between similar speech sounds, pick out accent and rhythm patterns, inflection, and the multiple complex reactions in understanding speech. The final aspect of this training concerns itself with helping the individual to understand speech and other sounds as communication and adjustment stimuli.

In my mind the ultimate aim of the situational approach is the individual's early participation in a hearing world without pain or embarrassment. A program of systematic auditory training should consist of a sufficient number of auditory experiences to permit individual insight into hearing problems. The program should permit graduating from the less difficult to the more difficult listening and hearing experiences. It should provide practice with all kinds of speech material, radio, motion picture, transcriptions, lectures in auditoriums, and telephone. It is at this point in the schedule that individual hearing problems would be ironed out. Attention is devoted to training individuals to listen in situations which approximate those they are likely to meet in a normal noisy world.

The final series of the lessons should integrate the work preceding them, complete training for optimum development of the acoustic analysis and interpretation, motivate individuals to obtain a perspective of their hearing problems in retrospect and in anticipation.

The meaning of sounds, both musical and speech, and the way sounds are associated with life experiences should stem from the listener's personal life. Practice is provided by stories told by the instructor, recordings containing multiple voices, descriptive musical backgrounds, and gross sound effect. Such a program, the results of which are presented by the tables included herein, was evolved in the military service. This study represents an attempt to evaluate auditory training of personnel with impaired hearing in Borden General Hospital.

1. Tests for measurement of progress in auditory training were constructed and standardized upon thirty normal ears.

2. The auditory training test was compared with the clinical test for agreement.

DISTRIBUTION OF THE SCORES ON PERFORMANCE FOR DISTANCE THRESHOLD ON FIRST TEST WITHOUT HEARING AID, FIRST TEST WITH THE HEARING AID, AND FINAL TEST WITH HEARING AID AFTER AUDITORY TRAINING

	No. Cases	Mean Distance Threshold	Standard Deviation
First test without hearing aid	472	1.98	2.02
First test with hearing aid	472	9.7	4.9
Final test with hearing aid after auditory training	472	18.72	3.94
	$t_{1,2} = 29$		$t_{2,3} = 31.1$

TABLE 1

3. Tests (Table 1) were administered to 472 cases upon entrance into the hospital, upon receipt of hearing aid, and upon completion of auditory training. The mean distance threshold for the experimental group on the first test without hearing aid was 1.98 feet with a standard deviation of 2.02. The mean on the first test with the hearing aid was 9.7 feet with a standard deviation of 4.9. The mean for the final test with hearing aid after auditory training was 18.72 feet with a standard deviation of 3.94. On the discrete series (Table 2) the mean for the first test without hear-

DISTRIBUTION OF SCORES ON PERFORMANCE FOR DISCRETE SERIES OF FIRST TEST WITHOUT HEARING AID, FIRST TEST WITH THE HEARING AID, AND FINAL TEST WITH HEARING AID AFTER AUDITORY TRAINING

	No. Cases	Mean Distance Threshold	Standard Deviation
First test without hearing aid	472	31.8	24
First test with hearing aid	472	62.6	12.7
Final test with hearing aid after auditory training	472	81.8	9
	$t_{1,2} = 19.62$		$t_{2,3} = 26.97$

TABLE 2

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DISTRIBUTION OF SCORES ON PERFORMANCE FOR DISTANCE THRESHOLD FOR MEN WHO WENT ON FURLOUGH AFTER RECEIPT OF HEARING AID

	No. Cases	Mean Distance Threshold	Standard Deviation
First test without hearing aid	53	1.28	1.24
First test upon receipt of aid	53	9.32	5.04
Final test with hearing aid for 38 men returning from furlough and 17 men of original experiment	53	10.	6.
	$t_{1,2} = 10.4$		$t_{2,3} = .63$

TABLE 3

DISTRIBUTION OF SCORES ON PERFORMANCE FOR DISCRETE SERIES FOR MEN WHO WENT ON FURLOUGH AFTER RECEIPT OF HEARING AIDS

	No. Cases	Mean Distance Threshold	Standard Deviation
First test without hearing aid	53	37.36	19.22
First test upon receipt of aid	53	64.62	10.8
Final test with hearing aid for 38 men returning from furlough and 17 men of original experiment	53	61.23	14.78
	$t_{1,2} = 10.5$		$t_{2,3} = 1.36$

TABLE 4

ing aid for the experimental group was 31.8 percent with a standard deviation of 24. The mean for the first test with a hearing aid was 62.6 percent with a standard deviation of 12.7. The mean for the final test with the hearing aid after auditory training was 81.8 percent with a standard deviation of 9. The difference between the second and third tests for the auditory training group revealed significant differences for both the distance threshold and the discrete series scores, indicating marked improvement on the final test.

4. A control of fifty-three individuals (Tables 3 and 4) were tested upon entrance to the hospital, upon receipt of hearing aid, and again at least four weeks after they received their hearing aids. This group did not receive any auditory training during the interval between their first and final tests with hearing aids. The performance on the distance threshold and discrete series tests for the non-auditory-training group reveals no significant difference between the means obtained during two testing periods. Nevertheless, a slight improvement in distance threshold appeared for the non-trained group from the first to the final test with the hearing aid. With respect to scores on the discrete series the t score shows no difference appeared between the means with slight decrease in mean score and a greater range.

5. The results of this study indicate that a systematic program of auditory training may be valuable for this optimum training of residual hearing. Further experimentation of this type would, of course, be desirable to substantiate the hypothesis presented here and in the studies of Silverman,[6] Goodfellow,[3] and others concerning the possibility of improvement in the use of residual hearing through auditory training.

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DR. HUDGINS: At this point we will introduce in the Proceedings a paper prepared by Mrs. Frances B. Asals and Miss Henrietta C. Ruthven, of the Pennsylvania School for the Deaf, Mt. Airy.

Acoustic Training for the Primary Grades

By FRANCES B. ASALS and HENRIETTA C. RUTHVEN

The problems confronting the teacher of the deaf are manifold, and with the advent of the group hearing aid came increasing obstacles to surmount. In auricular work the teacher should have a thorough understanding of her acoustic equipment, which includes a practical knowledge of the physics of sound. It is imperative that she acquire an accurate comprehension of each pupil's capacity to hear so that she can instruct him correctly in adjusting his volume control to his level of hearing; being careful that the volume is not increased beyond the point of intelligibility. A beginning auricular class can cause a maximum confusion in the schoolroom by the improper handling of earphones and volume controls unless correctly trained. A classroom free from both inside and outside noises is an essential factor in attaining the best results with a group hearing aid.

In the Pennsylvania School for the Deaf we feel that all children entering a primary grade should be given acoustic training. The stimulation of hearing is first given through the gross sounds. These consist of such instruments as the drum, cymbals, gong, bells. If the child hears these, he then tries to distinguish between them. Finally he discriminates between bells of varying kinds and sizes, whistles of different pitches, and various horns.

This work is given to discover which children respond and, for the child who responds, which sounds he can hear.

In giving this work, the first step is to have the pupils watch the teacher while she beats the drum or sounds any instrument. In the next step the pupils sit with backs to the teacher so that they are only listening. This, of course, is the real test of whether a child hears or not.

After a group has been given stimulation through gross sounds, it is introduced to a group hearing aid. It is thought best to begin with two fifteen-minute periods a day, then three periods, gradually increasing the length of periods until pupils can keep their earphones on for the greater part of the school day without experiencing any discomfort.

The training with the hearing aid includes music and speech.

Music

1. ON — OFF: The teacher plays the record—stops it—plays—stops, training the children to raise their hands and keep them raised while the record is being played, and to put their hands down when the record stops.

   a. pupils look and listen
   b. same exercise—hearing alone

2. HIGH — LOW: These words are printed on cards. A record is played. The teacher raises her hand for the high notes, pointing to the word *high*. Hand lowered, pointing to the word *low*, for the low notes. Children tell *high* and *low* notes by raising or lowering hands.

Use pictures of two instruments of the orchestra, from the same section—one high, one low—such as the violin and double bass, or the flute and bassoon.

a. teacher calls children's attention to *high* and *low*.

b. children respond by raising or lowering hands or by pointing to the printed words *high—low*.

3. MUSICAL INSTRUMENTS; VOCAL; BIRDS SINGING; ANIMAL CALLS.

The teacher selects pictures of:

a. musical instruments

violin	piano	bugle
harp	organ	xylophone
cello	flute	drum, etc.

b. orchestra
   band

c. ..... playing the piano
   ..... blowing a bugle
   ..... beating a drum, etc.

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b. Speak the words as record is being played.

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Rhythms	20162
	20526
(skipping)	20786
	204011
Singing Games	22761 22760
See Saw	20743
Grasshopper's Dance	D 495 A
Jolly Coppersmith	20318 (a favorite)
Lullaby	17212
	20174
Minuet	20109
Animal Sounds	
Gennett Records (Richmond, Indiana)	
	1155 1097
	1031 1180
Birds Singing	V 1 A
	D 188

Songs

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Songs for Children (My Old Dan)	19831
(The Big Drum)	20743
God Loves Me	20442
Songs for Little People	22133
	22135

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4. Table with dishes and articles of food.

5. Parts of the body.

arm	nose
eye	mouth

6. Things in the classroom

7. What the animals say—printed on large cards.

8. Colors—names of colors that sound unlike

9. Nouns—those given in lipreading. Each of these groups is built up gradually.

10. Numbers

11. Expressions (Natural Expressions). Six or seven are printed on a chart. a. Teacher points to the printed form as she speaks. b. Pupils repeat.

12. Expressions (Action Expressions). These are illustrated with the printed expression below the illustrations, as:

We played a game.
..... rode a bike.

The teacher speaks: a. Children point to the picture, b. They repeat.

Later on short topics, rhymes and short stories are given, and in this way language, through hearing, is established.

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It is extremely difficult to determine which children will *not* benefit from the acoustic training program. Naturally, more prompt response is noted in the child with considerable residual hearing, while the task of developing and stimulating sound appreciation in the child with very limited residual hearing is more difficult and the results much slower. But even the child who apparently gains nothing from the hearing aid may have slightly more fluent speech because of his associations in the auricular group than he would if trained only in a profoundly deaf class. Some children take much longer than others to understand the sound impressions they hear, and a longer period is needed before passing judgment. Caution should be used in appraising a child's limitations in hearing and he should be allowed to derive any benefit he can from the acoustic program unless he is preventing another child with a known sufficient amount of hearing from having the opportunities of the hearing aid.

The chief objective of an auricular program is the development of residual hearing to the point of ability to hear and understand language. The training increases mental activity by cultivating concentration, judgment and memory, and it develops more natural speech. Our aim is to restore the handicapped child to a normal place in society, and this can best be done if he has acquired the natural way of communication.

DR. SILVERMAN: Before summarizing, we will ask for questions.

MR. TURECHEK: If, as studies have indicated, a hearing aid with flat response is

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best for improving speech perception, what is the point of trying to fit a hearing aid?

DR. SILVERMAN: In the first place, experimentation has not shown that. It has shown that both the flat and the rising characteristic of six decibels per octave are desirable. Secondly, it is very difficult to get the mirroring of an audiogram. Thirdly, the audiogram shows only the threshold of detectability, as Dr. Hudgins has indicated. If you can recall the charts Miss Numbers showed, you will remember that you can get variations above threshold. In other words, to go back to what Dr. Hudgins said, the threshold alone is not indicative of how one hears speech over a wide range of intensity.

MR. DI CARLO: We worked with that for quite a while, and we actually found that although four or five instruments give much the same kind of performance, there is a psychological difference.

DR. SILVERMAN: I might indicate one point further, that if you yourself were to listen to speech that was of high fidelity, and then if you were to listen to six db. per octave rise, the speech of high fidelity would be mellower and fuller and more pleasant to listen to. The other might give you a little more intelligibility, but it would, so to speak, spit at you. One has to be careful in weighing subjective judgment.

DR. HUDGINS: The rise that you just spoke of will not reach the threshold of tolerability as quickly as the flat curve, because the low vowel tones are suppressed, and the weaker consonant tones are boosted. You can give them more amplification without the danger of reaching the pain threshold. It is possible to deal with more severely deafened ears when you use a gradual slope, and the reason is this matter of tolerability.

MR. GOLDBERG: Getting down to the more mundane factors in evaluating different types of hearing aids for children in schools for the deaf, can you give us some indication as to whether, when you finally have narrowed down the choice to one or two or possibly three aids, the type that contains mercury A batteries is better for the deaf children than the other type where you have a gradual deterioration of power?

DR. SILVERMAN: I think it is better to have an instrument that does not go gradually. However, we have not used that as a criterion for discrimination. Of course, there is the matter of expense, which has turned out to be really important, as we all know. In our laboratory, we have a battery tester which we have taught the children to use, and we feel that that should be part of their training, that they should be prepared to check their own batteries.

MR. GRACE: I would like to direct this question to Miss Keaster. I may have misunderstood, but in connection with the testing of smaller children, did you say that you have a child in a soundproof room and produce a very high amplified sound? That is, you start at the top high intensity and come down?

MISS KEASTER: No, we do not, Mr. Grace. We start out with low frequency as well as low intensity, and increase it to the child's apparent tolerance level.

MR. GRACE: I misunderstood you. I am sorry.

MRS. MARY ROGERS MILLER: What is the function of the otologist in connection with the fitting of a hearing aid?

DR. SILVERMAN: I think the place of the otologist is essential, that he should carry on a routine otological examination and give his impressions of the type of deafness and whether a certain fitting, particularly with regard to running ears, is not indicated for sanitary reasons. I think it is essential that everyone who thinks of getting a hearing aid should have an otological examination.

MRS. MILLER: What are we to do with a man who calls himself an otologist, who advises parents that they should not put a hearing aid on a child because he will come to depend upon it?

DR. SILVERMAN: A hearing aid makes

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one hear neither better nor worse physiologically. It seems to me that that is very bad advice. Why should a child be deprived of amplification? We should use our ears and eyes as much as we can use them. My answer is, see another otologist.

MR. NICHOLS: My question is directed to Dr. Hudgins. If you have a hearing difference of 20 decibels in two ears, would you be required to give different loudness to each ear? In other words, would you expect to have a different amount of sound coming from each earphone?

DR. HUDGINS: We have not run any special tests of that kind, but I would say that it would be rather important to equate the two ears within a reasonable amount, say within five decibels or even less, if possible, where a difference as great as 20 decibels appears. You could do that with a binaural set, by using individual attentuators or volume controls for each phone. It would be rather important, I would say, to equate the two ears where the difference is very great, especially in a classroom situation. That is one of the things that are perhaps neglected in buying stock phones and putting them on children rather indiscriminately. It is impossible to run accurate checks and to do all the other things that the teacher has to do unless she has some rather good technical assistance.

MR. NICHOLS: Would it be best, with a child who was too young to get a good picture of the hearing and the tolerance threshold, to expose him to only a small intensity of sound?

DR. HUDGINS: I cannot conceive of a condition where you could not determine the threshold of tolerability, but if you can't, then to play safe you would have to be very sure that you do not allow the sound to get above a given intensity within a perfectly safe range.

DR. RANKIN: Do your experiments indicate that it is possible to raise the threshold of tolerance?

DR. HUDGINS: Yes, Dr. Silverman and his colleagues worked on that, and they showed that by the use of what they call acoustic massage, with both pure tones and speech sounds, it i possible to raise this threshold of tolerability by some ten or twelve decibels—over a period of how long, Dr. Silverman?

DR. SILVERMAN: It depends. Some six weeks, from day to day.

DR. HUDGINS: It is probably advisable to try to raise the threshold as much as is reasonably possible.

MR. SPARKS: As a superintendent, I have two eternal questions directed to me from parents: 1. Can my child use a hearing aid? 2. Which hearing aid?

I would like to know if I am correct in answering those questions. In answer to the question, shall my child wear a hearing aid, my answer is yes, if there is any remnant of hearing.

DR. SILVERMAN: That is correct.

MR. SPARKS: In answer to the question, which hearing aid, I point with a great deal of pride to the centers that have been established at Syracuse, Ann Arbor, and elsewhere, and I advise that they see the otologist and see our experts. But that term "remnant," I wish there were an explanation of that. Parents will come and ask me just what "remnant of hearing" means.

DR. MORLEY: Since I am from Ann Arbor, I would like to add this suggestion, that the child by all means be provided with some auditory training before he is provided with an auditory aid. When a child's experience acoustically has been very limited, try to provide him with some know-how so that when he does get a portable aid, he will have some idea of how he is supposed to react.

Then it is time to contact a center or someone who is reliable, and then go on into the consideration of hearing aid procurement. At Ann Arbor, we are quite opposed to advising parents to get a hearing aid for a child if he has not had the benefit of working on a group aid or individual amplifier.

DR. SILVERMAN: I think it was stated

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that these children that were receiving individual hearing aids had been prepared to receive them, both psychologically and auditorially.

DR. HUDGINS: The term "remnant" applies to this useful auditory area which can be determined only by audiometry. You can reasonably predict what the threshold tolerability will be. It will be up around 125 or 130 decibels. This is about as close as you can predict. Then you can measure the threshold of sensitivity or detectability, and you should do that with your clinical audiometer. From that you can determine what this remnant of hearing is. If you want to know if it is advisable to train a child with a rather small remnant, the answer is, yes, until we are very sure that we can set a limit. Right now I know of no one who would go out on a limb and say, "Children beyond this limit, whose remnant or whose auditory area is less than this, should be excluded from acoustic training programs."

I want to second what Dr. Morley has said about acoustic training in advance of advising parents to buy a hearing aid.

A VOICE: I am a parent, and my question is directed to someone connected with a clinic. I would like to know what would be the youngest possible age that you would have some idea of whether the child would have any hearing at all, or how old he would have to be before you could have an idea how much hearing he might have?

MISS KEASTER: We frequently see children as young as 18 months. Sometimes we see them as young as a year. It is a rather disappointing experience, because you bring a child in and you take him into the sound room. You are not sure of his responses to the sound, and we are not sure, either. We can only speculate about the meaning of his responses. If you are near an otological clinic, where they are equipped to do that kind of testing, I would suggest that you take the child as young as you like, but not expect too much, not a definite answer. Ask the people at the clinic if you may come back in six months and then in another six months; and eventually you will have the answer. If you came to us, that is the kind of suggestion you would get. We are awfully grateful to a parent who is willing to go along with us on not being able to get a pat answer the first time; we do not have the pat answer to give, simply because of the age of the child.

DR. SILVERMAN: The idea is to assume that there is hearing, and while you are waiting for confirmation, bathe the child with sound. Talk to him.

MR. NICHOLS: My wife discovered loss of hearing in our second child at the age of six months, and has become quite familiar with that experience. She will be here, and would be very glad to acquaint you with it.

DR. SILVERMAN: Are there any other questions? If not, I shall take 30 seconds to summarize.

Summary

The first essayist dealt with quantitative hearing tests for young children and went a little bit beyond the usual techniques, particularly in children who had language, in getting speech reception thresholds with meaningful material.

The second essayist gave us the background of the behavior of normal children with respect to sound, tracing the development from as early as four days after birth right to the period which we have been concerned with here. I think it is an excellent principle to orient ourselves to what we can expect from the normal hearing child. He also gave us some common sense advice about assessing the hearing of young children, and actual testing techniques; and he emphasized the importance of a case history which may help us in working with a six-month-old child in getting response to sound and otological collaboration.

Miss Soissons, the next essayist, indicated her general impressions and observations in selecting hearing aids for 34 children from the Illinois School for the Deaf; and the idea of a selective response to pictures was emphasized.

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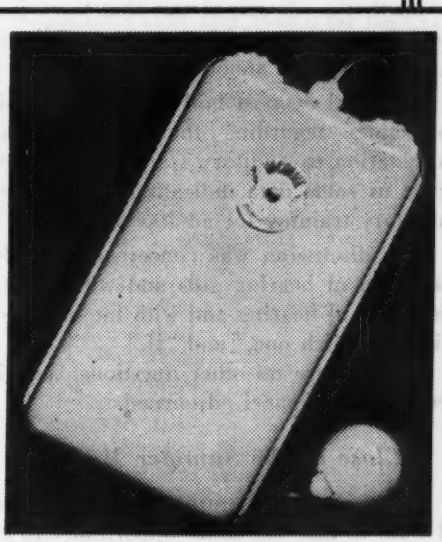

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Dr. Hudgins presented some of the rationale in auditory training, and the main point that he discussed was that there is a certain area into which you can punch and a roof that you cannot go beyond.

The final essayist laid down some basic principles regarding the psychology of orientation to auditory training, and then gave us some data indicating the value of auditory training for adults.

The discussion was concerned with the selection of hearing aids and with the assessment of hearing and with the old questions, "Which one," and "If."

If there are no other questions, we will consider this panel adjourned.

Close of the Summer Meeting

PRESIDENT O'CONNOR: Before we close, I want to take one more opportunity to express the gratitude of all the members of the Association who have attended this very excellent meeting, to Miss Alcorn and her capable staff, for the splendid intellectual and spiritual feast we have had this week. These gatherings are very, very profitable. They bring us an opportunity to renew our interest and our enthusism in the complicated project of teaching speech to deaf children.

Mr. Bernard Baruch, in addressing the graduates of the Lexington School in New York recently, used a phrase which I thought was interesting; he said that the teachers in the schools for the deaf were emancipating these children. I thought his words were very timely, because he himself is handicapped. He said on the platform: "I not only have one bad ear, I have two bad ears and one bad hand and two bad feet." Then he added: "Now what is wrong with me? I am a handicapped person, but I have managed to struggle along."

I think we will all agree that he has managed to struggle along pretty well!

Our meeting is over. We have renewed our enthusiasm. Once more I thank all of the participants for the very, very fine program. The fifty-eighth annual meeting of the Association is now adjourned.

The Meeting in Snapshots and Stories

DR. RANKIN, N. CAROLINA, AND MR. KLEIN, LUTHERAN SCHOOL, IN A JOVIAL MOOD.

Shortcut: *A superintendent, having sent out notices regarding anti-tetanus injections, had a call from a parent who demanded, "What about this shot in the jaw you are going to give the deaf children?" "You mean the shot in the arm, don't you?" replied the superintendent. "It is a shot in the arm for the prevention of lockjaw." "Oh," said the parent, "I thought maybe it was some treatment—you shot them in the jaw and then they started to talk."*—DR. C. D. O'CONNOR.

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Yea Verily: *He that thinketh by the inch and speaketh by the yard ought to be kicked by the foot.*—DR. MARCUS SHATTUCK.

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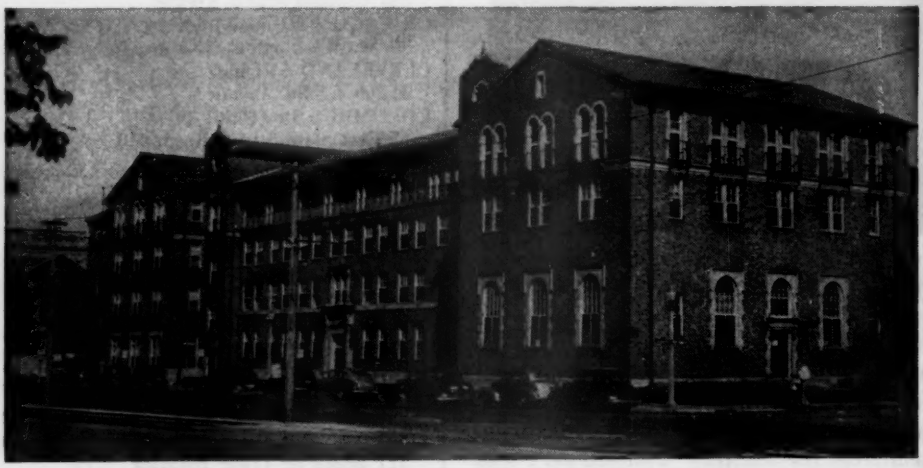
30 W. Washington St.
CLEVELAND 6 (Ohio)
11,206 Euclid Avenue
COLUMBUS 15 (Ohio)
55 East State Street, Room 410
DAYTON 2 (Ohio)
924 U. B. Building
DENVER (Colorado)
1556 Emerson Street
DETROIT 1 (Michigan)
418 West Elizabeth St.
HARTFORD 3 (Connecticut)
Room 212, 252 Asylum Street
INDIANAPOLIS 4 (Indiana)
318-319 Board of Trade Building
JERSEY CITY 2 (New Jersey)
574 Jersey Avenue
LOUISVILLE (Kentucky)
111 Board of Trade Building
LYNCHBURG (Virginia)
303 Krise Building
LYNN (Massachusetts)
59 Baltimore Street
MIAMI (Florida)
216 N. E. Third Street
MILWAUKEE (Wisconsin)
322 W. Wisconsin Ave., Suite 601
MINNEAPOLIS (Minnesota)
1722 Hennepin Ave.
PATERSON 1 (New Jersey)
182 Ellison St.
PHILADELPHIA 3 (Pennsylvania)
2019 Spruce Street
PITTSBURGH 22 (Pennsylvania)
74 Methodist Bldg., 524 Penn Ave.
PORTLAND 5 (Oregon)
39 Selling-Hirsch Building
918 S. W. Washington St.
SAINT LOUIS 8 (Missouri)
4527 Westminster Place
SAINT PAUL 1 (Minnesota)
490 Endicott-on-Robert Bldg.
SALT LAKE CITY 1 (Utah)
544 S. Main Street
SAN FRANCISCO 2 (California)
414 Mason St., 700 Native Sons Bldg.
SPRINGFIELD (Mass.)
1694 Main Street
TOLEDO 10 (Ohio)
2313 Ashland Avenue
WASHINGTON 9 (District of Columbia)
2431 14th St., N. W.

CENTRAL INSTITUTE FOR THE DEAF

NATIONAL RESIDENTIAL AND DAY SCHOOL FOR THE DEAF AND DEFECTIVES IN SPEECH

Approved by Advisory Council of Foremost Ear Specialists and Educators



Fire-proof buildings beautifully located opposite Forest Park. Modern Dormitories and Equipment. Best home environment. Pupils constantly in care of teachers or experienced supervisors.

ORAL SCHOOL FOR DEAF CHILDREN: Central Institute offers all advantages of exclusively Speech Training and daily expert medical supervision of both Resident and Day Pupils.

Education and Training from Nursery School to High School.

CLASSES FOR HARD-OF-HEARING CHILDREN: Salvaging of Residual Hearing is a specialty of Central Institute using the Acoustic Method of Dr. Goldstein. Lip Reading, speech conservation and academic instruction for hard-of-hearing children at all grade levels.

LIP READING FOR ADULTS: Private and Class Instruction for the adult deaf Conversation Classes for all pupils.

CORRECTION OF SPEECH DEFECTS: Classes for development of speech of congenital aphasics; instruction for correction of stuttering and articulatory defects; instruction in oral inaccuracies, lisping, cleft palate; speech instruction and physio therapy for spastics.

Private and class instruction from 3 years of age to adult level.
Academic instruction at elementary school level.

TEACHERS' COLLEGE: This department is affiliated with Washington University. With adequate pre-professional training, applicants may qualify, after a 2 year professional course, for the B.S. in Education or M.S. in Education granted by Washington University.

Founded by Dr. Max A. Goldstein
Miss Julia M. Connery, Principal Emeritus

For further information address
DR. HELEN S. LANE, *Principal*
818 S. KINGSHIGHWAY (10) ST. LOUIS, MO.